HYXI

User Manual

AIR COOLING ENERGY STORAGE SYSTEM

HYX-EF100P2-40K/49.9K/50K-EU



Carefully read this user manual before use.
Read and save these instructions.

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About This Manual

This manual provides the user with safety precautions, features and specifications, transport and storage, installation and wiring, powering on and off the system, and routine operation and maintenance of the energy storage system.

To ensure the proper installation and use of the energy storage system and its superior performance, before installing and using the product, please read this manual carefully, understand safety information, and be familiar with the functions and characteristics of the energy storage system.

Please read the operating instructions in detail and follow all safety precautions in the instructions.

Scope of Application

This manual is intended for the following devices:

- HYX-EF100P2-40K-EU
- HYX-EF100P2-49.9K-EU
- HYX-EF100P2-50K-EU

For Readers

This manual is intended for professional technicians who need to install, operate and maintain the product and for users who need to check the product parameters and carry out routine operations.

All installation operations must be carried out by professional technicians and only by professional technicians.

Use of the Manual

Please read the manual carefully before using the product. Contents of this manual are subject to update and revision. Minor discrepancies between the manual and the actual product may exist. Users can refer to the actual product purchased and obtain the latest version of the manual by downloading from www.hyxipower.com or through sales channels.

Use of Symbols

To ensure user safety and property protection during product use, relevant information is provided and highlighted with the following symbols.

⚠ DANGER

- Indicates a high potential hazard that, if not avoided, could result in death or serious injury.

⚠ WARNING

- Indicates a moderate potential hazard that, if not avoided, could result in death or serious injury.

⚠ CAUTION

- Indicates a low potential hazard that, if not avoided, could result in moderate or minor injury.

NOTICE

- Indicates a potential risk that, if not avoided, could result in the equipment not functioning properly or in property damage.

1 Safety Instructions

1.1 Safety Principles

Relevant safety precautions must be strictly observed during installation, operation and maintenance. This product is a combined high-voltage DC and three-phase AC system and must only be operated by authorized personnel.

HYXI is not responsible for any of the following situations or their consequences:

- Equipment damage caused by earthquakes, floods, volcanic eruptions, mudslides, lightning strikes, fires, wars, armed conflicts, typhoons, hurricanes, tornadoes, extreme weather, and force majeure.
- Not operating under the usage conditions specified in this manual.
- The installation and use environment does not comply with relevant international, national or regional standards.
- Not following the operating instructions and safety warnings in the product and documentation.
- Unauthorized disassembly, modification of products or modification of software codes.
- Equipment damage caused by transportation performed by you or a third-party you commission.
- Damage caused by storage conditions not meeting product documentation requirements.
- The materials and tools you provided do not meet the requirements of local laws, regulations, and relevant standards.
- Damage caused by negligence, improper operation, or reasons beyond HYXI's control on the part of you or a third party.

⚠ DANGER

- There is life-threatening high voltage inside the product. Observe and follow the warning labels on the product.
- Do not touch the mains supply or the internal contacts connected to it, to avoid the risk of a fatal electric shock.
- Damage to the battery may result in electrolyte leakage. If electrolyte leaks, do not touch the leaked electrolyte or volatile gases, and contact the after-sales team immediately for assistance.

⚠ WARNING

- Transport, installation and maintenance must comply with local regulations and the requirements set out in this user manual.
- Installation work must be carried out by qualified, full-time personnel.
- Any actions or behaviour that may damage the battery system or cause personal injury are prohibited.
- Users are prohibited from replacing modules. HYXI shall not be liable for any damage caused thereby.

1.2 Personnel Safety

This product must only be operated by qualified electricians or professionals, who must meet the following requirements:

- They must be familiar with local standards and relevant electrical safety regulations.
- Operators must have received specialist training in the installation and commissioning of electrical equipment, and must be capable of dealing with emergencies or unforeseen circumstances that may arise during installation or commissioning.
- Operators must possess a certain level of expertise in electronics, electrical wiring and mechanics, and be familiar with electrical and mechanical schematics.
- Operators must be fully familiar with equipment protection and standard maintenance procedures, and operations must comply with local safety standards.

1.3 Environmental Safety

- Do not install or use this product in environments where the temperature is below -30° C or above 55° C.
- Do not install or use this product near heat sources or flammable materials.
- Do not install or use this product in areas with high foot traffic.
- Do not expose this product to corrosive gases or liquids.
- Keep this product out of the reach of children and animals during installation and use.
- The maximum installation altitude for this product should not exceed 3000 m.
- Sufficient space should be provided for the installation of this product to ensure adequate ventilation.
- A barrier must be erected during installation to prevent unauthorized persons from entering the site.

1.4 Electrical Safety

Operators must ensure that they understand all essential information and step-by-step instructions before commissioning or disconnecting isolating switches and circuit breakers.

⚠ DANGER

Battery safety

- During equipment installation and maintenance, ensure that the battery is completely disconnected. Place visible warning signs at disconnection points to prevent accidental re-connection of the battery.

⚠ DANGER

Safety regarding earth fault protection

- In the event of an earth fault, parts that are normally de-energised may become live at high voltage; accidental contact may endanger personal safety. Before operating, ensure that no earth fault is present and take the necessary protective measures.

⚠ DANGER

Safety regarding live-line measurements

- As this equipment carries high voltage, protective measures (such as wearing insulated gloves) must be taken when carrying out live line measurements, and the operator must be accompanied by another person to ensure personal safety.

⚠ DANGER

Safety regarding arc protection

- Avoid the risk of arcing, fire and explosion caused by improper operation.
- Do not touch uninsulated cables that may be live.
- If a power cable connection becomes loose, or if screws or other components fall out accidentally, do not attempt to operate the equipment yourself; this must be handled by a qualified professional to prevent further faults.

1.5 Transport and Installation Safety

⚠ DANGER

- During wiring, two or more operators must not connect a single conductor simultaneously.

⚠ WARNING

Personnel operating regulations

- If required on-site, forklifts, cranes, and other construction machinery must be operated by qualified operators.
- During installation, operators must wear insulated protective equipment that complies with safety regulations.
- When connecting to the mains supply on site, a qualified supervisor must be appointed to ensure that the relevant switches are kept in the off position.
- Ensure that the equipment is disconnected from the mains supply before installation.
- Each completed task must be inspected at least once and cross-checked during the installation process.
- Equipment must be installed in sequence; no steps may be omitted.

⚠ WARNING

Wiring regulations

- Appropriate measuring equipment must be used in accordance with local standards and regulations.
- The operating manual for the measuring equipment must be consulted before carrying out any measurements.
- Only HYXI-specified equipment shall be used. Use of non-approved equipment may impair safety functions and lead to personal injury.

⚠ WARNING

Post-installation commissioning

- The equipment may only be put into operation after it has been verified by a qualified professional and authorized by the local electricity authority.
- Before operation, switch off all distribution circuit breakers.
- When the product is in operation, do not disconnect the distribution circuit breakers.

1.6 Routine Operation and Maintenance

All operations on this product must follow the instructions in this manual. Any equipment damage caused by non-compliance with these instructions shall be the responsibility of the operator, and the warranty shall be void. If necessary, please contact HYXI customer services for repair.

⚠ WARNING

- Do not modify the product's software, casing or components without authorization from HYXI. Any such modifications will invalidate the relevant liability and warranty.
- Do not remove or alter the nameplate.
- Do not open the cabinet door in adverse weather conditions, such as rain or strong winds.

1.7 Product Disposal

When the product as a whole or any of its internal components has become obsolete or damaged and needs to be disposed of, it must not be treated as ordinary waste. Certain components inside the product can be recycled and reused.

Improper disposal of certain components may lead to environmental pollution. Please contact a qualified local specialist recycling organization to ensure the product and its internal components are disposed of properly.

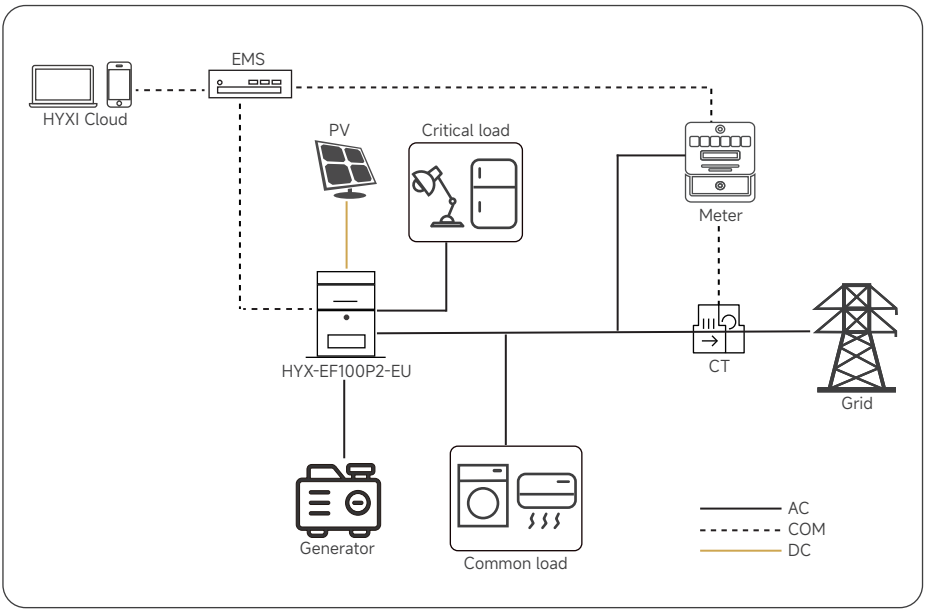
2 Product Overview

2.1 Product Description

This product is an all-in-one outdoor photovoltaic and energy storage cabinet (ESS), which integrates a battery pack (with a capacity of 100 kWh), a high-voltage box, a hybrid inverter (with a power rating of 40/49.9/50 kW), a distribution box, a fire protection system, a smart air-cooling system and other components.

It supports a range of applications, including peak shaving and valley filling, self-use mode, backup mode and full feed-in; it is suitable for small-scale commercial and industrial settings such as farms and supermarkets.

2.2 System Diagram



2.3 Product Model

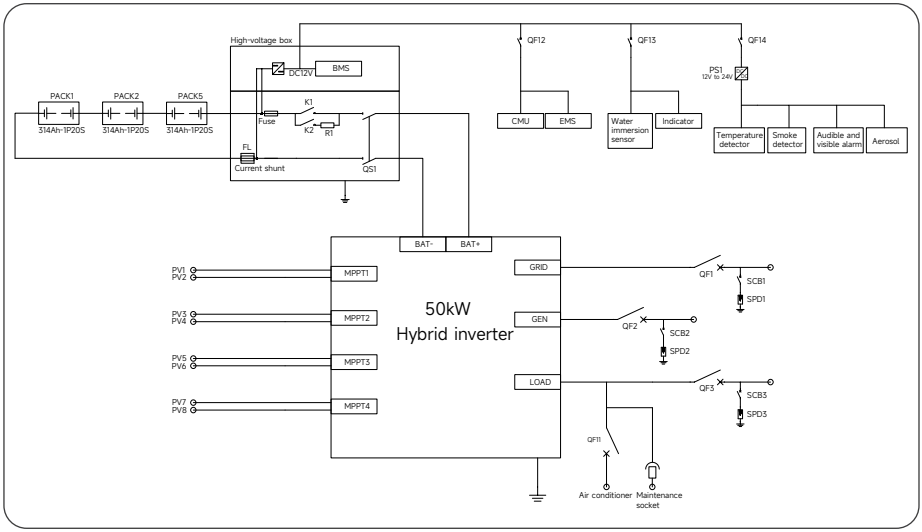
This manual involves the following product models:

- HYX-EF100P2-40K-EU
- HYX-EF100P2-49.9K-EU
- HYX-EF100P2-50K-EU

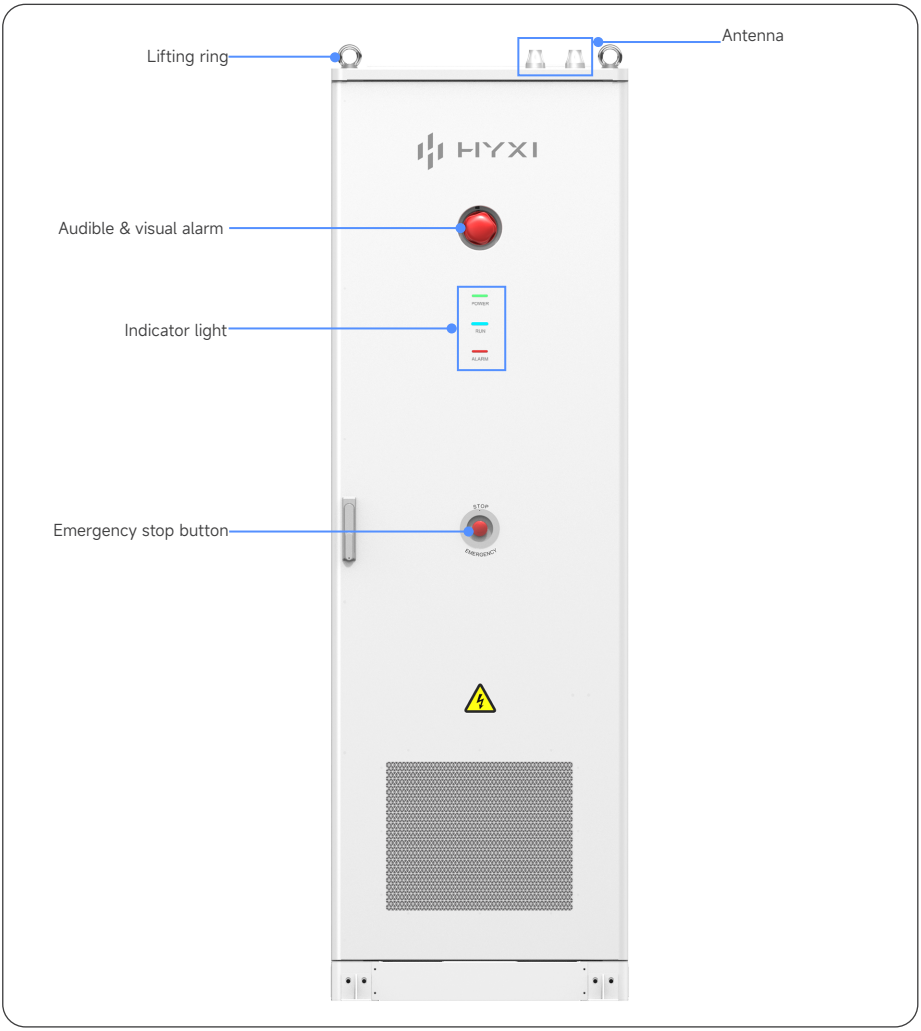
The meaning of the model name is as follows (using HYX-EF100P2-50K-EU as an example):

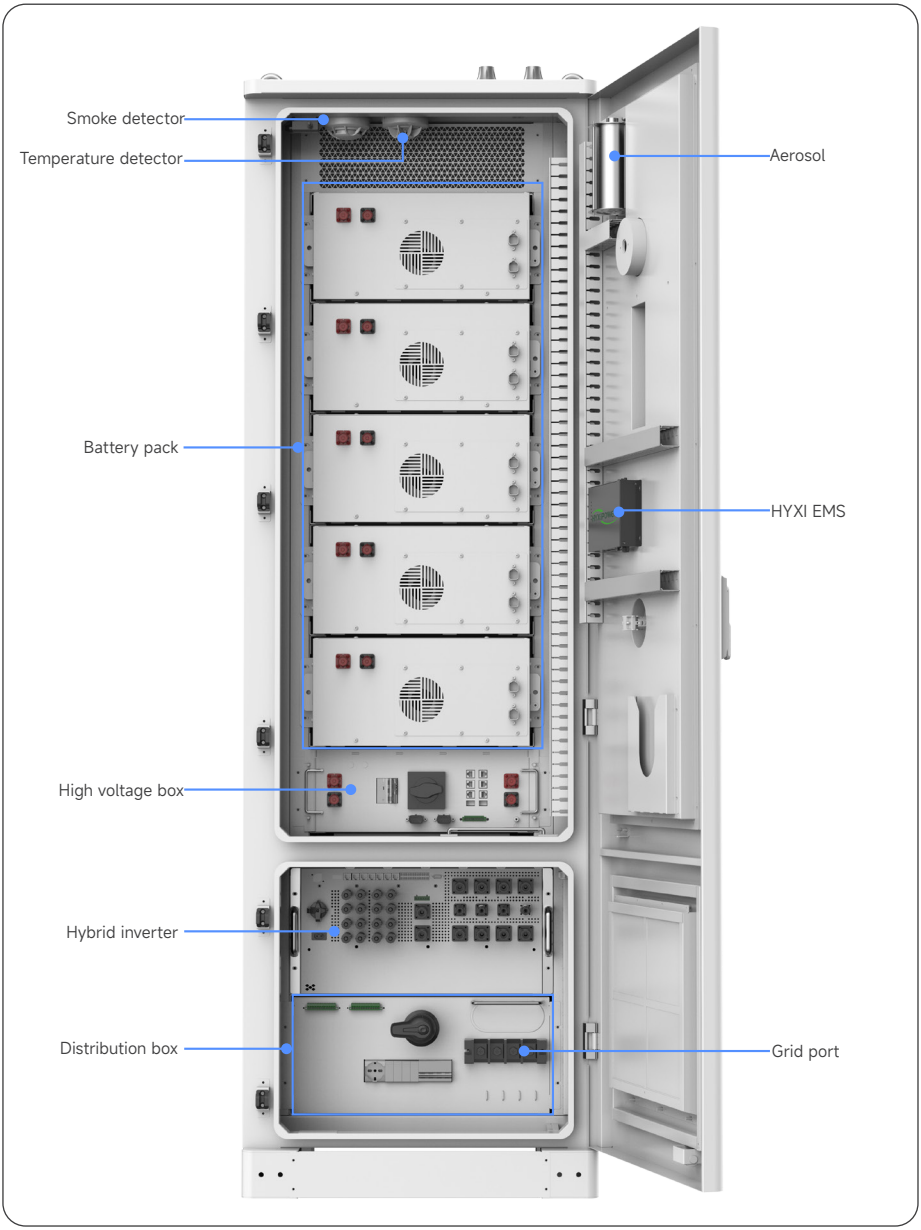
Identification	Meaning	Description
HYX	HYXiPOWER	Company name
EF	Fan-cooled energy storage system	Cooling concept
100	100kWh	System rated capacity
P2	2h system/ 0.5C rate	A full charge or complete discharge takes 2 hours
50K	50kW	The hybrid inverter has a rated power of 50 kW
EU	European	Component selection is suitable for the European market

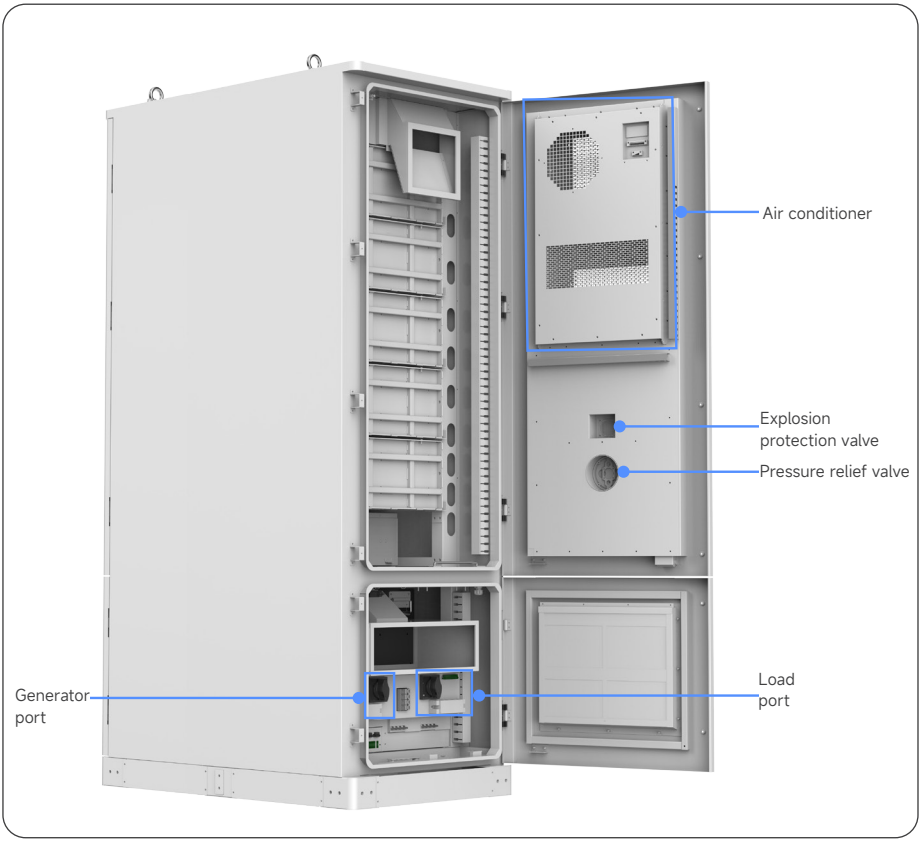
2.4 Circuit Diagram



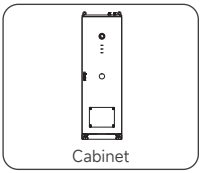
2.5 Product Appearance

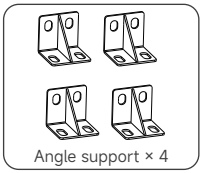


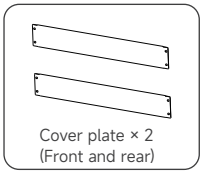

Smoke detector
Temperature detector
Aerosol
Battery pack
HYXI EMS
High voltage box
Hybrid inverter
Distribution box
Grid port

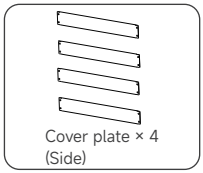

Air conditioner
Explosion protection valve
Pressure relief valve
Generator port
Load port

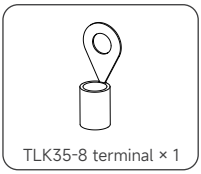
2.6 Packing List

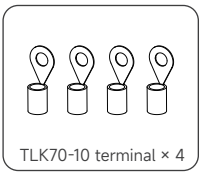

Cabinet

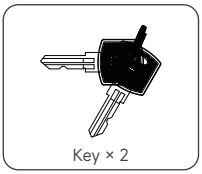

Angle support × 4

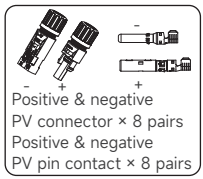

Cover plate × 2
(Front and rear)


Cover plate × 4
(Side)


TLK35-8 terminal × 1


TLK70-10 terminal × 4


Key × 2



Positive & negative
PV connector × 8 pairs
Positive & negative
PV pin contact × 8 pairs

3 Transportation & Storage

NOTICE

- Failure to transport and store the product in accordance with the requirements of this manual may void the warranty.

3.1 Unpacking and Inspection

- Upon receipt of the product, verify all delivered components against the Packing List.
- Check that the cabinet and product models you have received match the models you ordered.
- Inspect the product carefully to ensure it is in good condition, as damage may have occurred during transit due to knocks or impacts. If you discover any issues, please contact HYXI or the transport company without delay.

3.2 Transport Requirements

All necessary equipment within the product is installed and secured inside the cabinet prior to leaving the factory, allowing the product to be transported as a single, complete unit. Transporting the product in its packaging must meet the following requirements:

- Ensure that the cabinet doors are securely locked before transport.
- A single ESS cabinet shall be packed in a wooden case for transportation, and cushioning shall be provided between the wooden case and the ESS cabinet.
- Warning signs or caution tape must be displayed to prevent unauthorized personnel from entering the lifting and transport areas, thereby avoiding accidents.
- Clear any existing or potential obstacles, such as trees and cables, from the route during movement.
- If possible, choose favourable weather conditions for transporting the cabinet.

Item	Icon	Description
Upward		Indicates that the transport package should be kept upright during transport and storage.
Fragile items		Indicates that the package contains fragile items and should be handled with care.
Keep Dry		Indicates that the package is susceptible to rain damage. Rainproof measures should be taken during logistics storage and transportation.
Do Not Tumble		Indicates that the transport package must not be tumbled during logistics handling.
Do Not Stack		Indicates that the package can only be placed in a single layer.

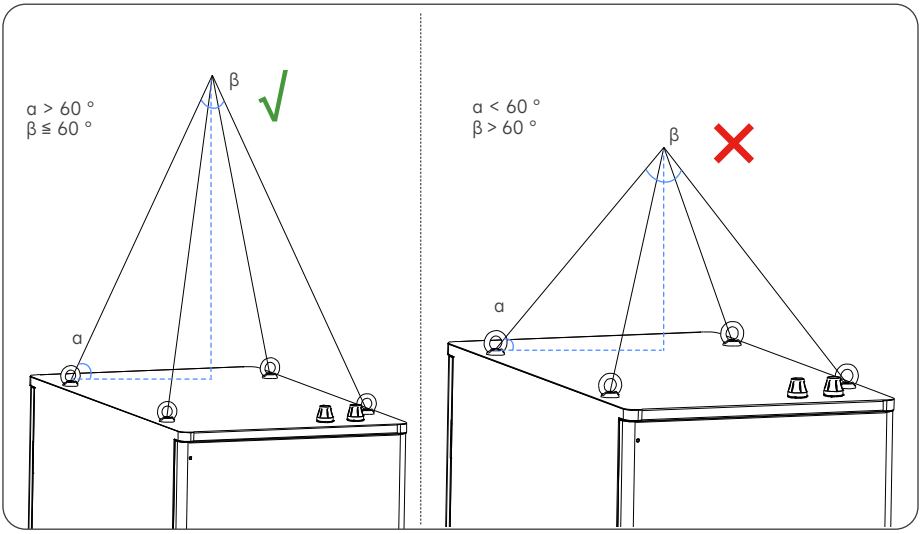
3.2.1 Land Transportation Requirements

- Select a suitable crane or lifting equipment based on the on-site conditions. The chosen equipment must have sufficient load-bearing capacity, boom length and operating radius.
- If movement is required on a slope or in similar conditions, additional towing equipment may be required.
- When transporting the cabinet by land, ensure that the lifting rings at the top of the cabinet are secured to the transport vehicle using ropes to prevent excessive tilting during transit.

3.2.2 Crane Hoisting Requirements

This product is equipped with lifting rings at the top, which can be used for hoisting and for transport via lifting. The following requirements must be met when hoisting the product:

Lifting Process	Precautions
Before Lifting	The lifting capacity of the crane shall be ≥ 3 t, and the working radius shall be ≥ 2 m. If the on-site working conditions do not meet the requirements, professional personnel shall be invited for evaluation.
	Personnel engaged in lifting operations shall receive relevant training and be qualified before taking up their posts.
	Lifting tools shall be inspected and be fully equipped before use.
	Ensure that lifting tools are firmly fixed to load-bearing fixtures or walls.
	When used outdoors, it is recommended to lift cabinet in sunny and windless weather.
	Proceed with lifting only after confirming that the crane and steel cables meet the requirements.
	All doors of the cabinet shall be fully closed and locked.
	Ensure that the connection of steel cables is safe and reliable.
	It is recommended to adopt a lifting sequence from left to right or right to left to ensure the lifting proceeds smoothly.
During Lifting	Unrelated personnel are prohibited from entering the lifting area, and standing under the crane boom is strictly forbidden.
	Ensure the crane is positioned properly and long-distance lifting is not allowed.
	Lift and lower the cabinet gently. When the cabinet is lowered, the movement should be slow and steady to avoid impact on internal equipment.
	Keep the cabinet stable, and the tilt angle of the cabinet shall be ≤ 5°. Ensure the angle between the two cables is ≤ 90°.
After Lifting	When the cabinet contacts the base, remove the lifting steel cables only after the base is uniformly stressed.
	Dragging steel wire ropes or lifting tools is prohibited, and cabinet collisions must be avoided.



3.2.3 Forklift Requirements

This product is equipped with fork holes at the base, designed specifically for transport by forklift. If the installation site is level, the product can be moved using a forklift.

The forklift transport must meet the following requirements:

1. Load-bearing capacity

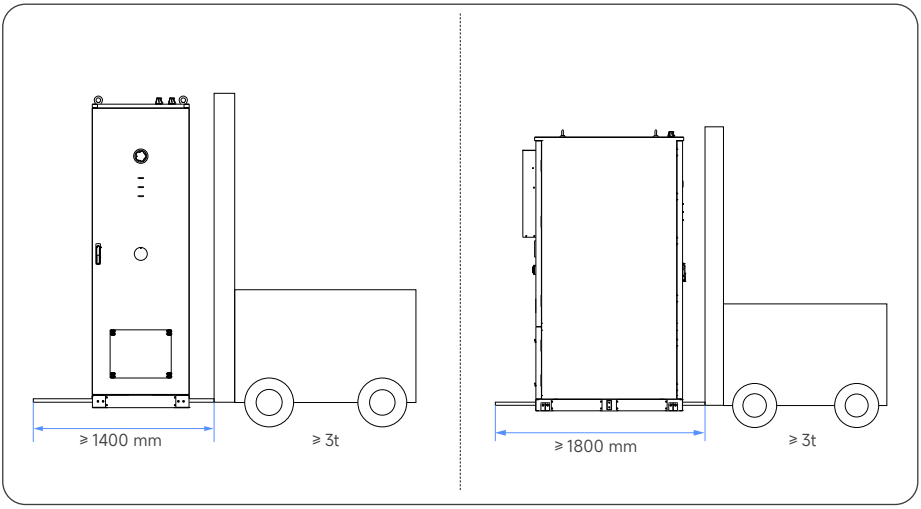
If a forklift is used for installation, the forklift's load-bearing capacity must be ≥ 3t.

2. Fork dimensions

Recommended fork length: ≥ 1800 mm

Recommended fork width: 230~300 mm

Recommended fork thickness: 25~80 mm



3. Lifting height

The forklift's lifting height must be ≥ the on-site foundation height + 0.2 m.

For example: If the on-site foundation height is 0.3 m, the forklift's lifting height must be ≥ 0.5 m.

3.3 Storage Requirements

3.3.1 Storage Environment Requirements

- The product shall be stored on a dry,solid, level surface (levelness deviation ≤ 5 mm) with sufficient load-bearing capacity and free from vegetation.
- To prevent condensation forming inside the product or the base becoming wet during the rainy season, the product should be stored on higher ground.
- The base must be elevated; the specific elevation should be determined based on on-site geological and meteorological conditions, as well as other circumstances.
- Storage environment temperature: 0°C to +35°C ; humidity: 0% to 95%RH (non-condensing).
- Take care to protect the product from adverse environmental conditions, such as sudden temperature changes (both cold and hot) and impacts, to prevent damage to the battery packs.

3.3.2 Storage Operation Requirements

- The packaging box must not be tilted or turned upside down.
- Ensure that the cabinet doors are securely locked before storing.
- Effectively protect the product's air inlets and outlets to prevent rainwater, sand and dust from entering the cabinet.
- As long-term storage can lead to capacity degradation, it is not recommended to store the battery for more than six months.
- For products that have been in long-term storage (exceeding six months), a visual inspection should be carried out before installation to ensure there is no condensation and to verify that the cabinet is intact and undamaged. Furthermore, an inspection must be carried out after power-on.
- Inspections should be carried out regularly.

NOTICE

- From the date of delivery, the battery pack shall undergo a charge-discharge cycle every six months to maintain the system's state of charge (SOC) between 25% and 40%.

4 Pre-Installation Preparation

4.1 Installation Environmental Requirements

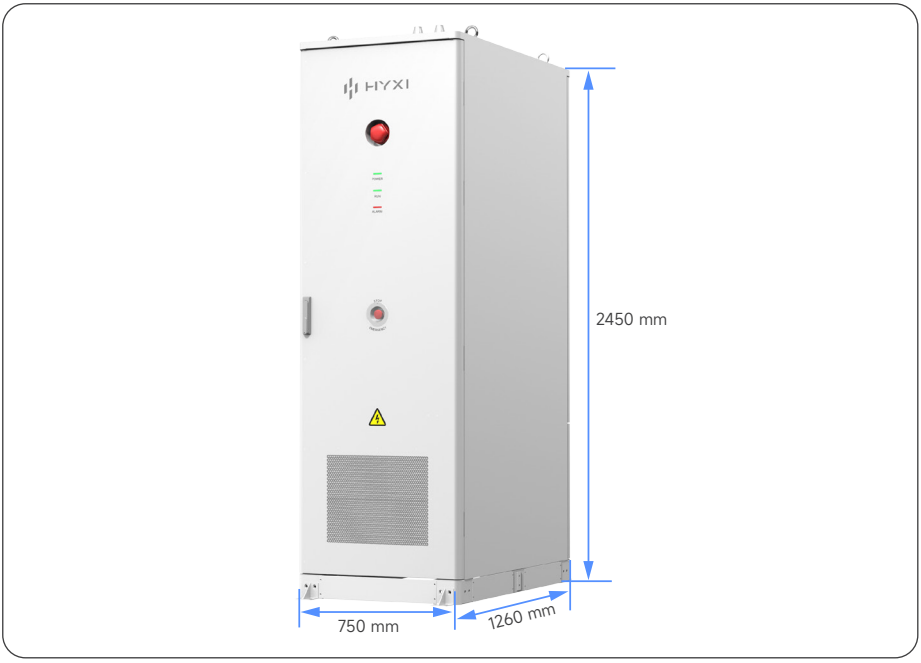
4.1.1 Site Requirements

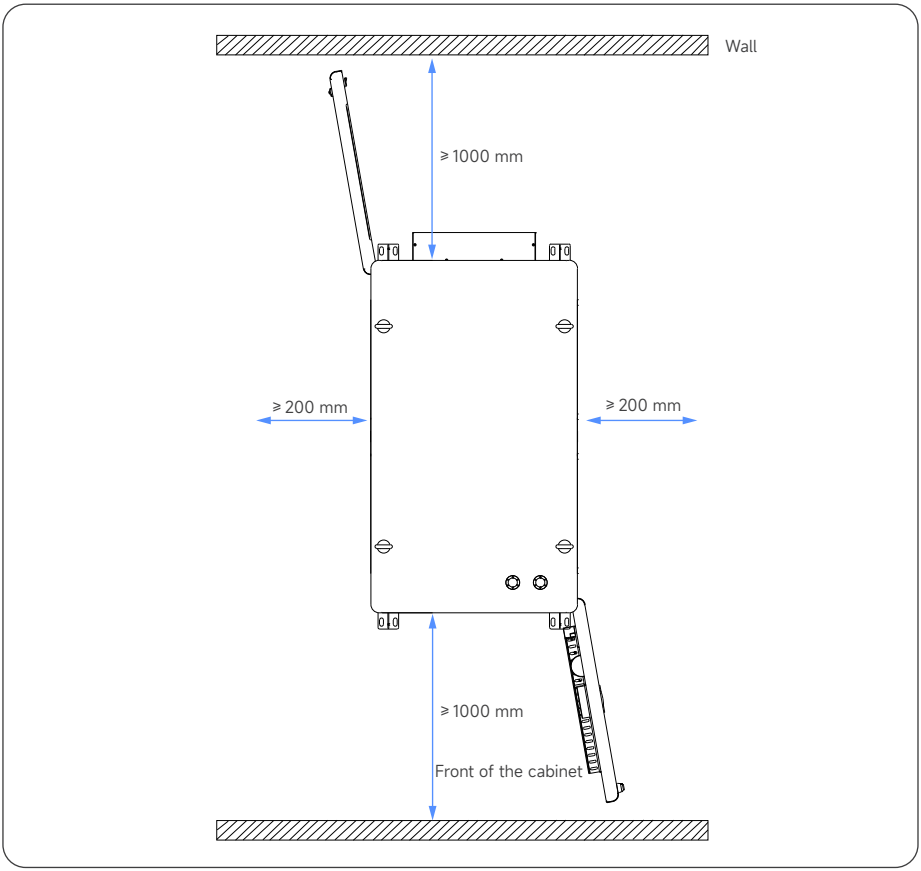
- When selecting an installation site, due consideration should be given to the surrounding environment (climatic and geological conditions).
- The surrounding environment should be dry and well-ventilated.
- Ensure there are no trees in the vicinity of the installation site to prevent branches or leaves from blocking the doors or air intakes of the energy storage system during strong winds.
- The installation site should be kept away from toxic and harmful gases, as well as flammable, explosive, corrosive and dust-laden substances.
- The installation site should be kept away from residential areas to avoid noise disturbance.

4.1.2 Space Requirements

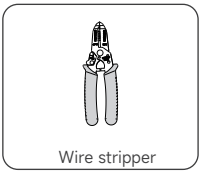
This product features a front-to-rear ventilation design. Please ensure there is sufficient space around the equipment to facilitate heat dissipation and maintenance; it is recommended that adequate space be left around the cabinet installation area.

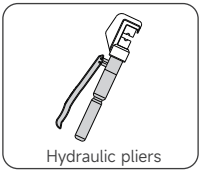
- The clearance to the front/rear of the product must be no less than 1000 mm.
- The clearance to the left/right of the product must be no less than 200 mm.

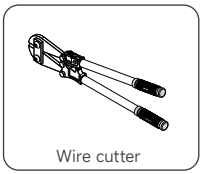


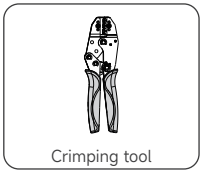

Wall
≥ 1000 mm
≥ 200 mm
≥ 200 mm
≥ 1000 mm
Front of the cabinet

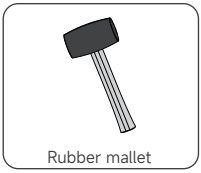
4.2 Installation Tools


Wire stripper

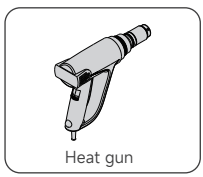

Hydraulic pliers

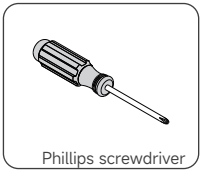

Wire cutter

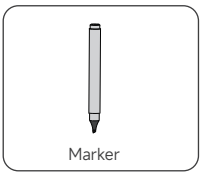

Crimping tool

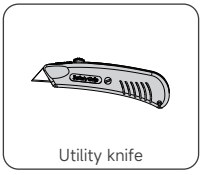

Rubber mallet

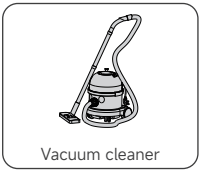

Hammer drill

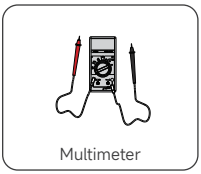

Heat gun

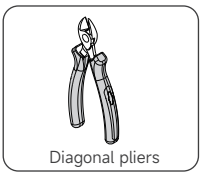

Phillips screwdriver

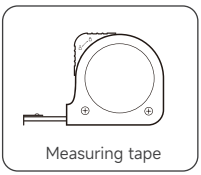

Marker

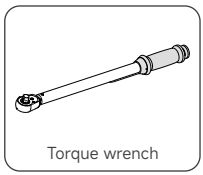

Utility knife


Vacuum cleaner

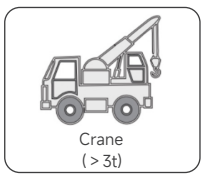

Multimeter

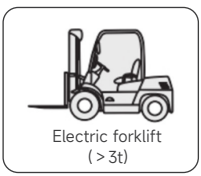

Diagonal pliers


Measuring tape


Torque wrench

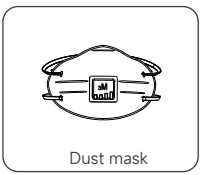

Insulated ladder

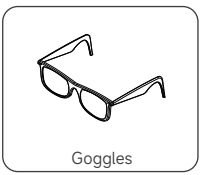

Crane
(> 3t)


Electric forklift
(> 3t)

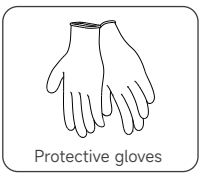

Safety helmet


Safety vest


Dust mask


Goggles


Insulated shoes

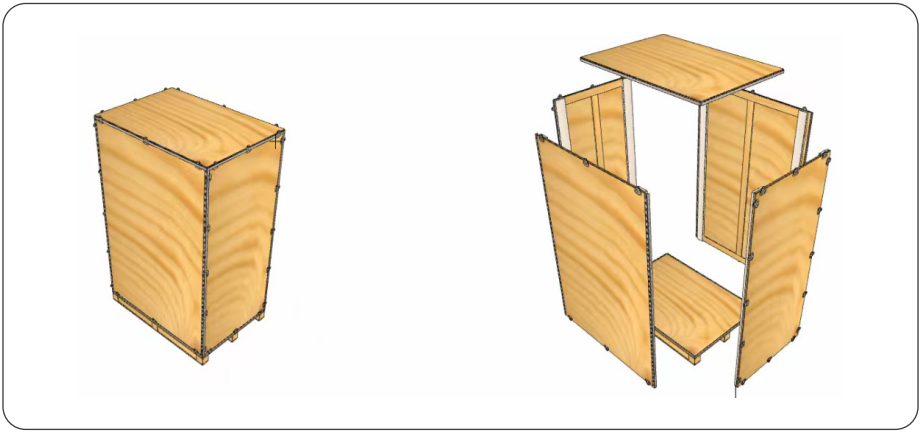

Protective gloves

5 Mechanical Installation

5.1 Unpacking and Acceptance

The cabinet is 100% tested and inspected prior to shipment from the manufacturing facility. However, damage may still occur during transportation. Before unpacking the energy storage cabinet, check the model and the outer packaging for damage such as holes and cracks.

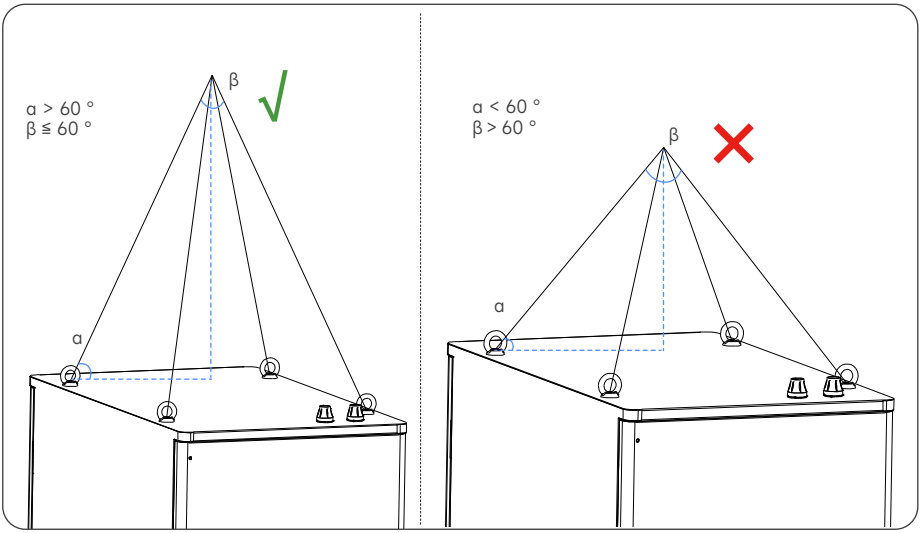
Since the height of the cabinet is more than 2 meters, take necessary precautions when disassembling the outer packaging to perform high-altitude work safely. See the following diagram for disassembly procedures.



5.2 Cabinet Handling: Crane Hoisting / Forklift Requirements

Crane Hoisting

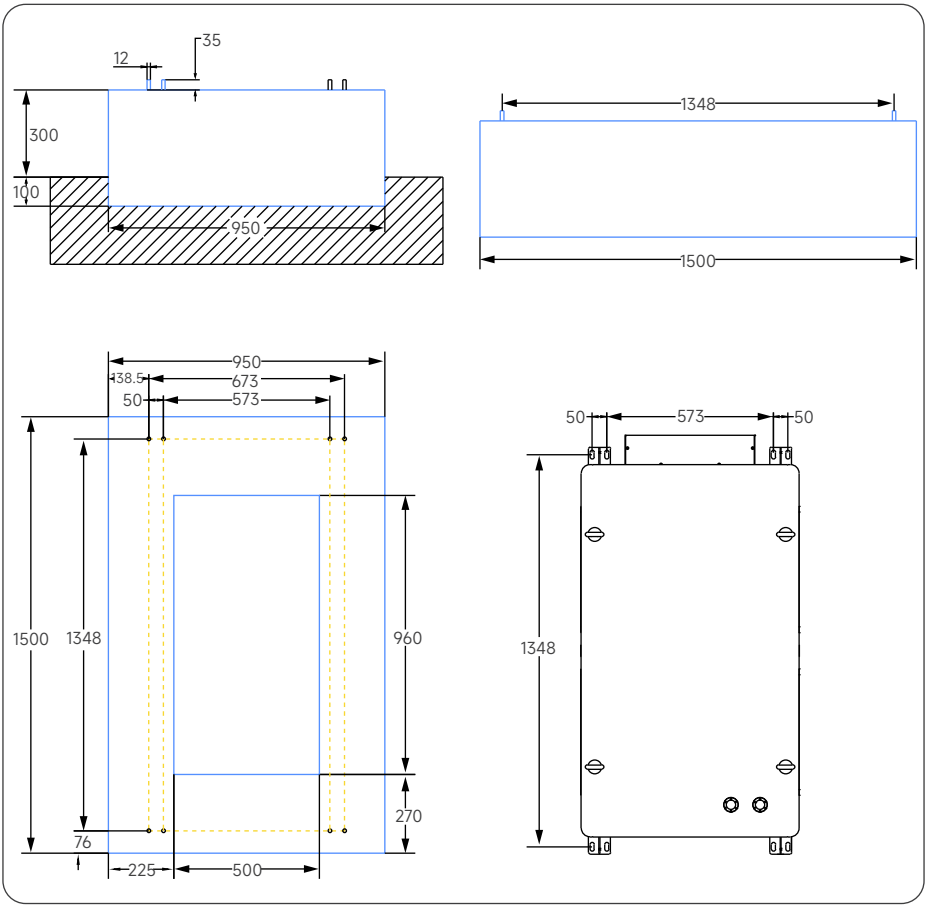
For detailed information, refer to 3.2.2 Crane Hoisting Requirements.



Forklift

Before using a forklift to move the cabinet, ensure that it is securely fixed in place and that there is no risk of it tipping over. For detailed information, refer to 3.2.3 Forklift Requirements.

5.3 Foundation Requirements

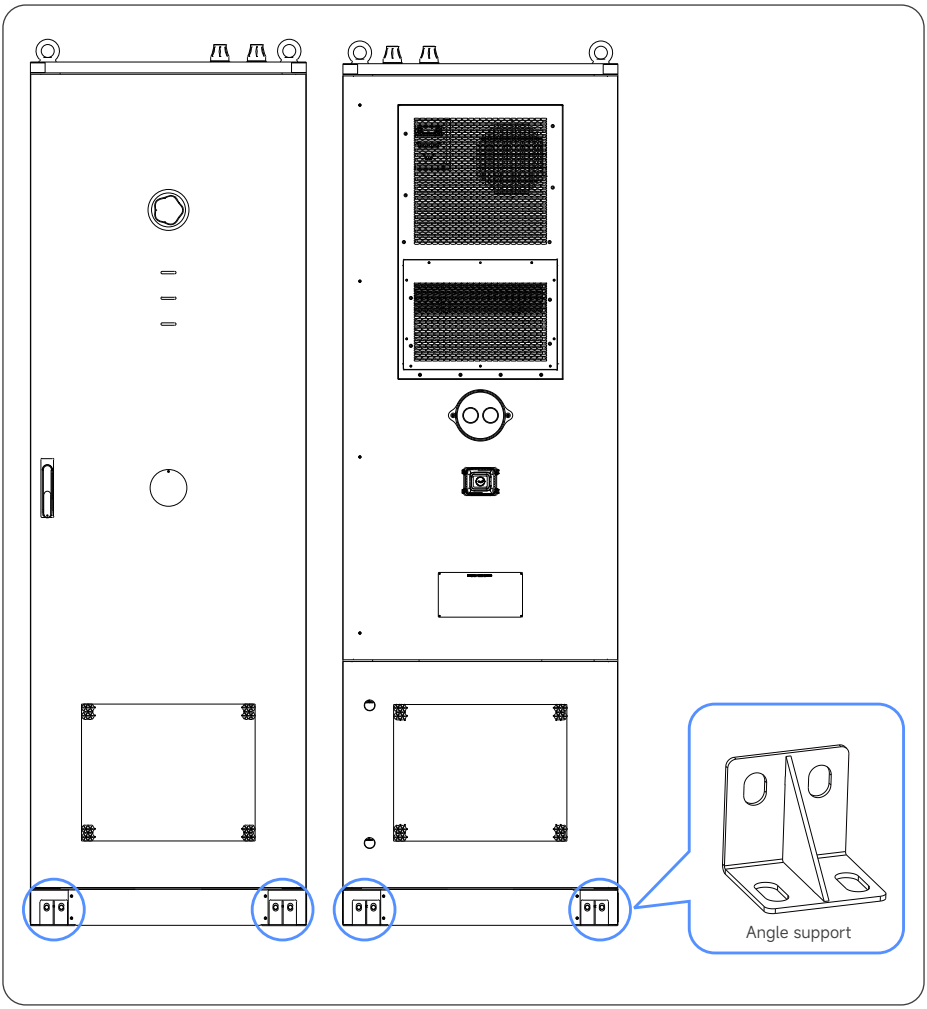


- The foundation should provide adequate load-bearing support for the cabinet.
- The foundation shall be higher than the highest recorded flood level.
- Foundation bearing capacity > 3 tonnes; Foundation design life > 50 years.
- It is recommended that the base be installed approximately 300 mm to 500 mm above ground level to prevent rainwater ingress.
- Drainage measures should be implemented in accordance with local geological conditions.
- The energy storage system must be installed on a concrete or other non-combustible surface. The installation plane must be horizontal, firm, and flat, with sufficient load-bearing capacity. Concavities or inclinations are prohibited.

- The cabinet foundation shall be configured according to the total weight of the cabinet. If the bearing capacity of the foundation does not meet the requirements, rechecking is necessary.
- The bottom of the equipment foundation pit must be compacted and filled flat.
- After the cabinet foundation is excavated, water immersion and disturbance are strictly prohibited. If water immersion and disturbance occur, further excavation and replacement filling shall be carried out.

5.4 Fixing the Energy Storage System

Secure the angle support to the cabinet, and fix the expansion bolts using a torque wrench.



6 Electrical Connections

6.1 Wiring Requirements

- Depending on the location and dimensions of the cable entry and exit points, sufficient space should be allowed for the AC-side cable trunking, and cable conduits should be installed in advance during the foundation works.
- The specifications and quantity of the conduits depend on the cable type and the number of cables.
- Both ends of all pre-embedded pipes should be temporarily sealed to prevent the ingress of debris.
- Once all cable connections have been completed, the cable entry points, exit points and connectors should be sealed using fire-resistant clay or other suitable materials to prevent rodent intrusion.

6.2 Cable Requirements

- The cross-sectional area must meet the requirements for maximum current-carrying capacity, and sufficient length must be allowed for.
- The specifications and materials of three-phase AC output cables must be consistent.
- Flame-retardant cables must be used.
- The cables used must comply with local laws and regulations.

NOTICE

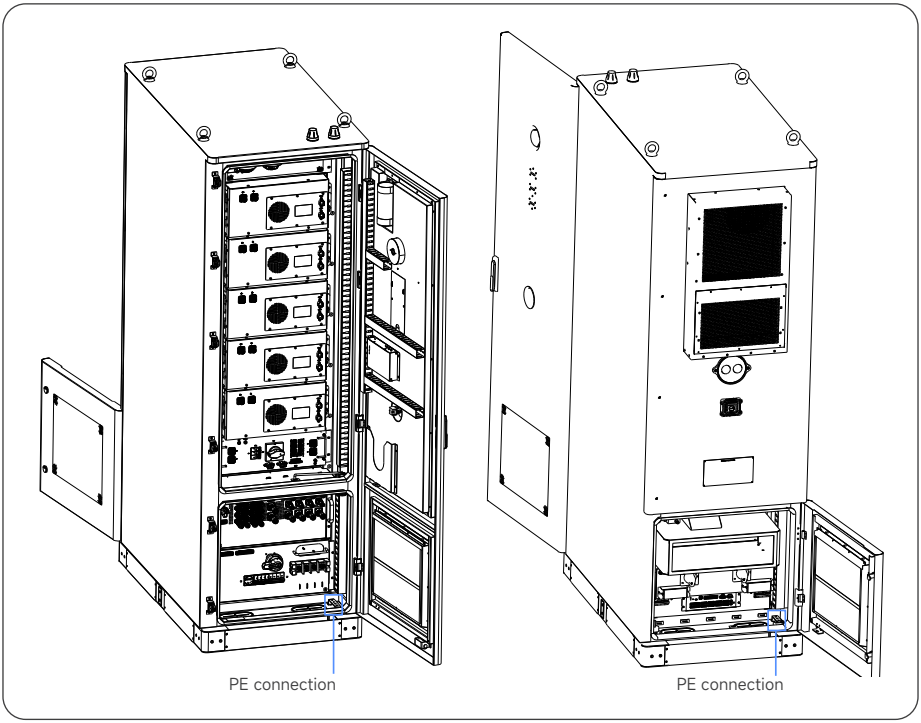
- The following cables are prepared by the user.

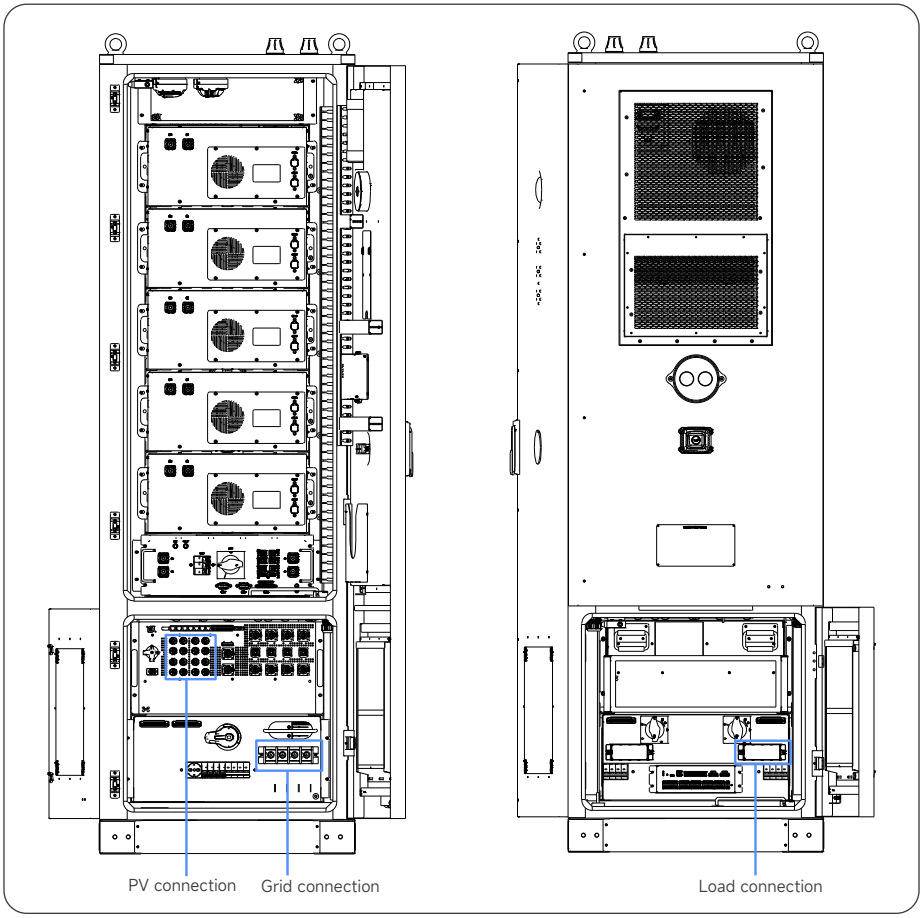
No.	Cable	Cable Type	Specification	Remarks
1	PV connection cable	Copper-core wire	6 mm^2	Prepared by the user
2	Grid cable		50 mm^2	
3	Load cable		25 mm^2	
4	Generator cable		50 mm^2	
5	PE cable		16 mm^2	
6	Meter communication cable	Outdoor shielded twisted pair	1 mm^2	
7	RJ45 connection cable	Cat6A shielded network cable	/	

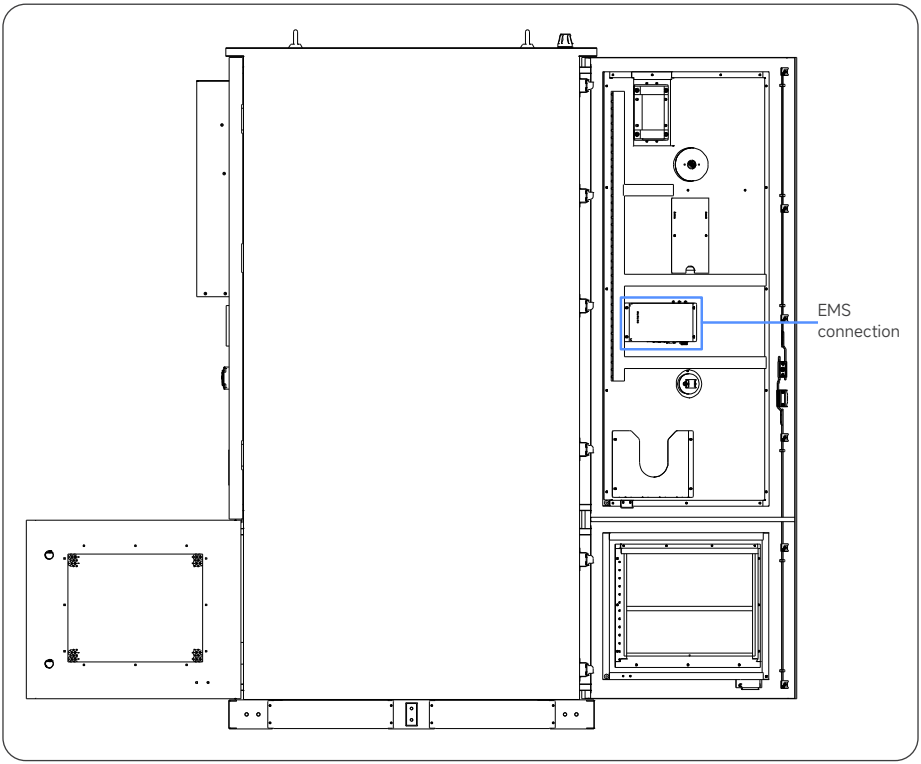
6.3 Checking Before Wiring

- The cables and terminals used must comply with the requirements for cable diameter and shielding.
- Check that the cables are correctly labelled.
- All relevant wiring accessories are in place.
- Personnel carrying out the wiring work are wearing protective equipment.
- Confirm that all circuit breakers are in the off position.

6.4 Wiring Location Diagram




PV connection
Grid connection
Load connection

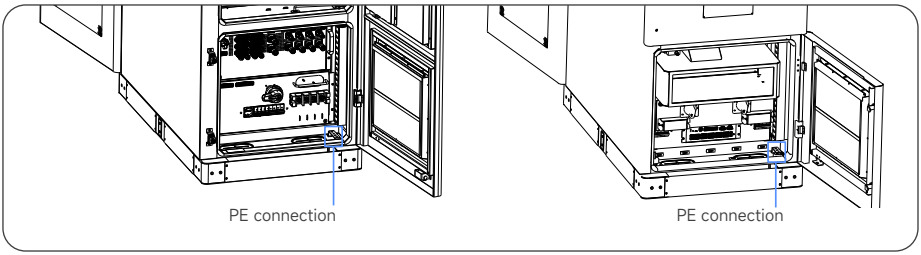

EMS
connection

6.5 PE Connection

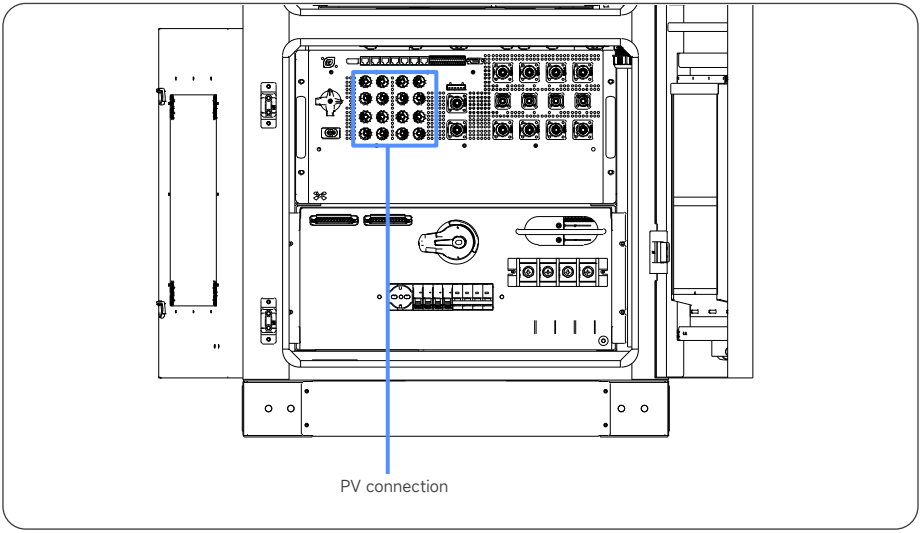
Secure the DT terminals to the copper busbar using M10 screws.

NOTICE

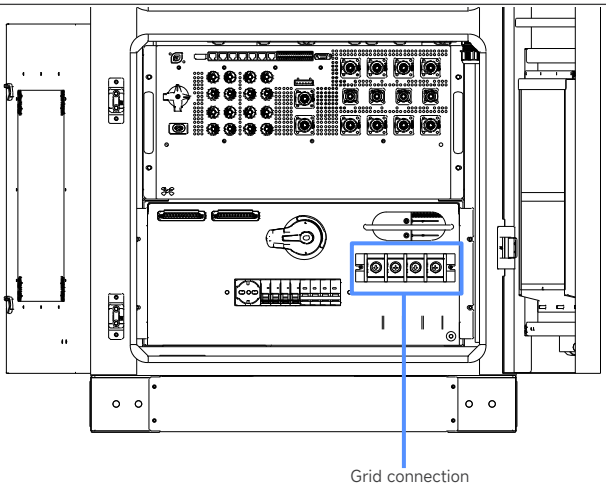
- The protective earth cable must be connected.
- This product utilises a TN-S system and incorporates both the mains PE conductor and the load PE conductor.
- Once the PE connection has been completed, the PE resistance must be measured, and the specific PE resistance value must comply with the relevant regional and local standards and regulations.



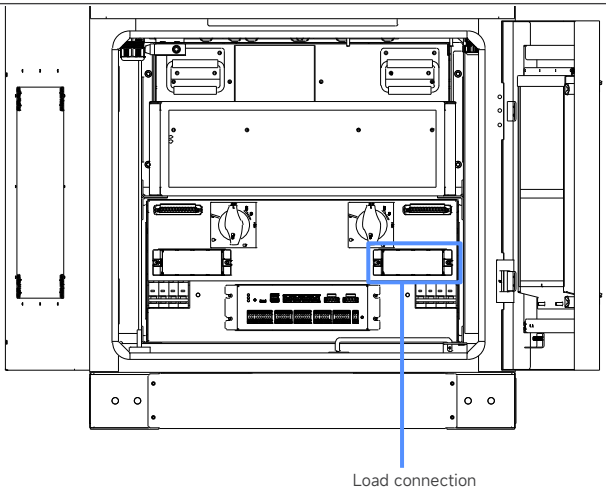
6.6 PV Connection



6.7 Grid Connection

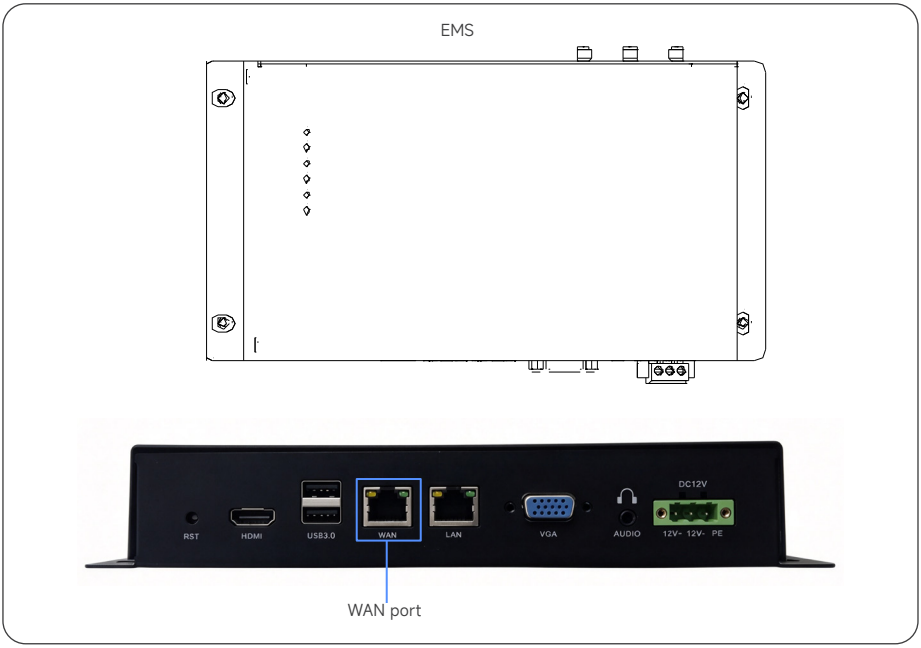


6.8 Load Connection



6.9 EMS Connection

Connect to the WAN port of the EMS.



6.10 Checking After Wiring

- Check that the AC phase sequence connections are correct; measure the resistance between the three phases.
- Check that the connections for external cables, PE cables and communication cables are secure.
- The resistance of the PE cable shall be less than 0.1 Ω.
- Clear the installation area and ensure that no tools or other debris are left inside the energy storage cabinet.
- Seal the gaps and openings around the cable entry and exit points of the energy storage cabinet using fire- and water-resistant materials.

7 System Commissioning

7.1 Checking Before Power-On

This product must be verified by a qualified professional and approved by the local electricity authority before it can be put into operation.

For products that have been out of service for an extended period, a comprehensive and thorough inspection of the cabinet must be carried out before power is applied; power may only be applied once all parameters have been confirmed to meet the requirements.

- Check that the wiring is correct.
- Check that the emergency stop button has been reset.
- Check that the surge protective device is functional.
- Check the PE cable connection and confirm there are no earthing faults.
- Use a multimeter to check that the AC and DC voltages meet the start-up conditions and that there is no risk of overvoltage.
- Confirm that no tools or components have been left inside the cabinet.
- Check for condensation; if present, open the energy storage cabinet for ventilation until the condensation has completely dissipated.
- Check that the air conditioner is operating normally and that there are no unusual noises.
- Check the signal and power cable areas for loose ends, metal debris or other foreign objects that could cause a short circuit.

7.2 Powering On the ESS

Step 1: Close mains circuit breaker QF1.

Step 2: Close air-conditioner miniature circuit breaker QF11.

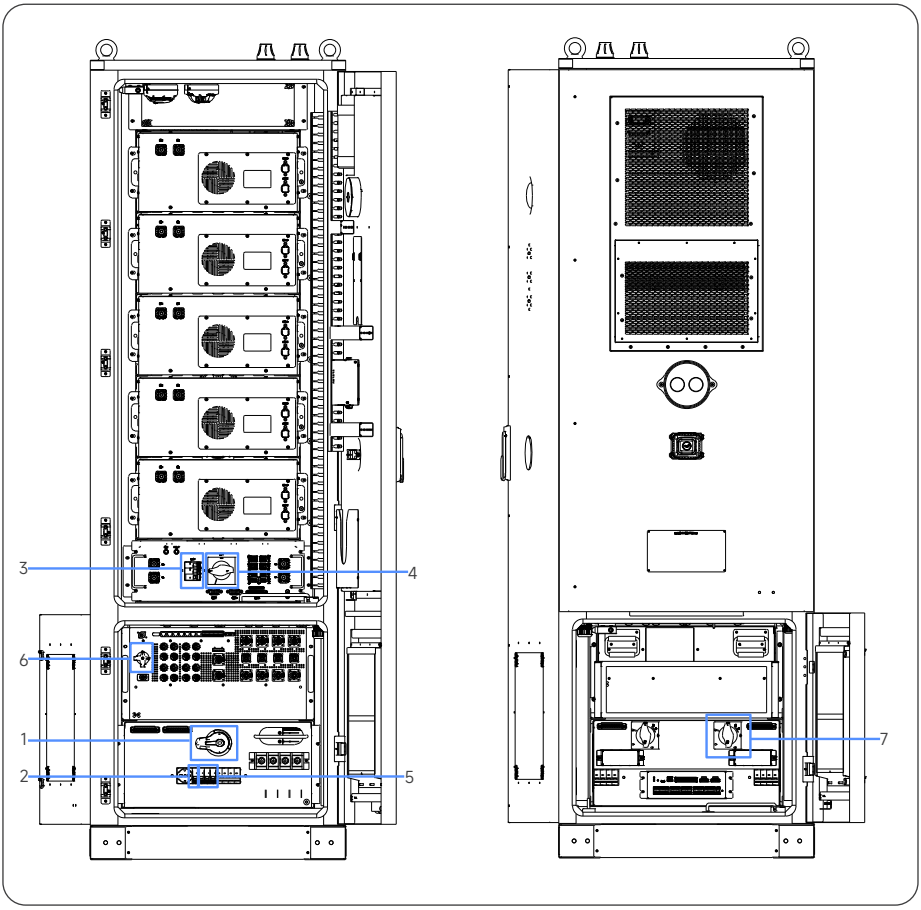
Step 3: Close miniature circuit breaker QF2 for the high-voltage box auxiliary power supply.

Step 4: After the indicator lights up, close disconnector QF1 on the high-voltage box.

Step 5: Close system auxiliary power supply breakers QF12, QF13 and QF14.

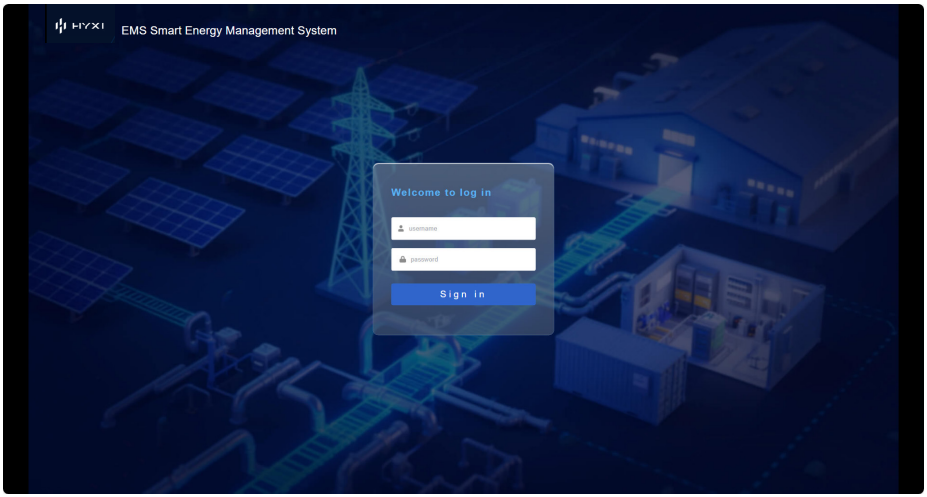
Step 6: Close PV disconnector.

Step 7: Close load moulded case circuit breaker QF3.



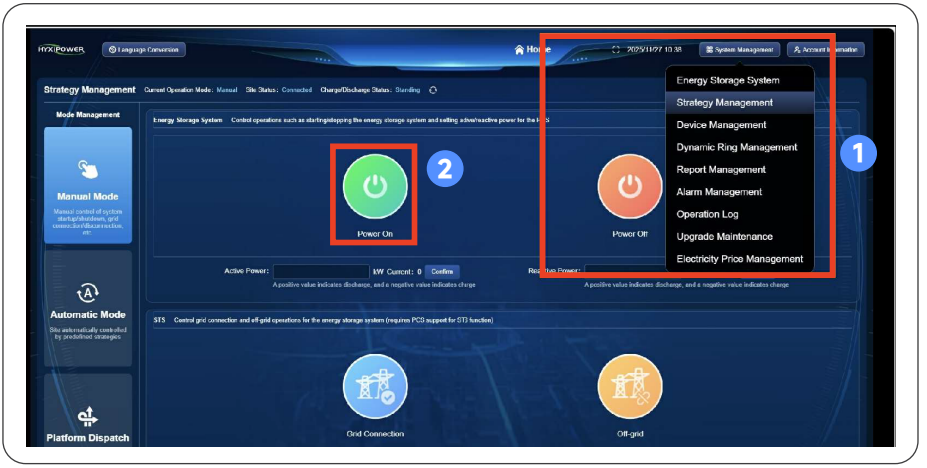
Step 8: Power on the system via EMS:

» Connect your PC to the same network as the EMS's WAN port.
Open a web browser (Firefox or Google Chrome is recommended) and enter the IP address http://192.168.101.1 to log in.



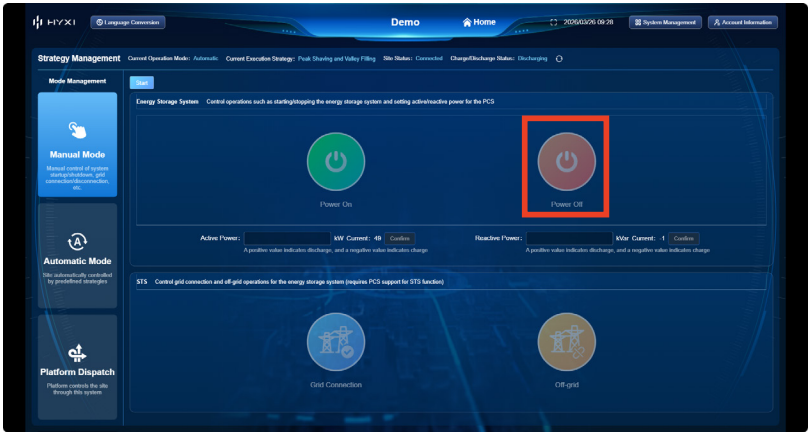
» On the login page, enter your "Username" and "Password". The default username is [admin], and the default password is [admin123]. Click **Login** to access the main page of the system.

» Through the setting path **System Management > Strategy Management > Power On** to issue a power-on command to the system.



7.3 Powering Off the ESS

Step 1: Power off the system via EMS: Tap **Power Off** to issue a power-off command to the system.



Step 2: Open load moulded case circuit breaker QF3.

Step 3: Open PV disconnector.

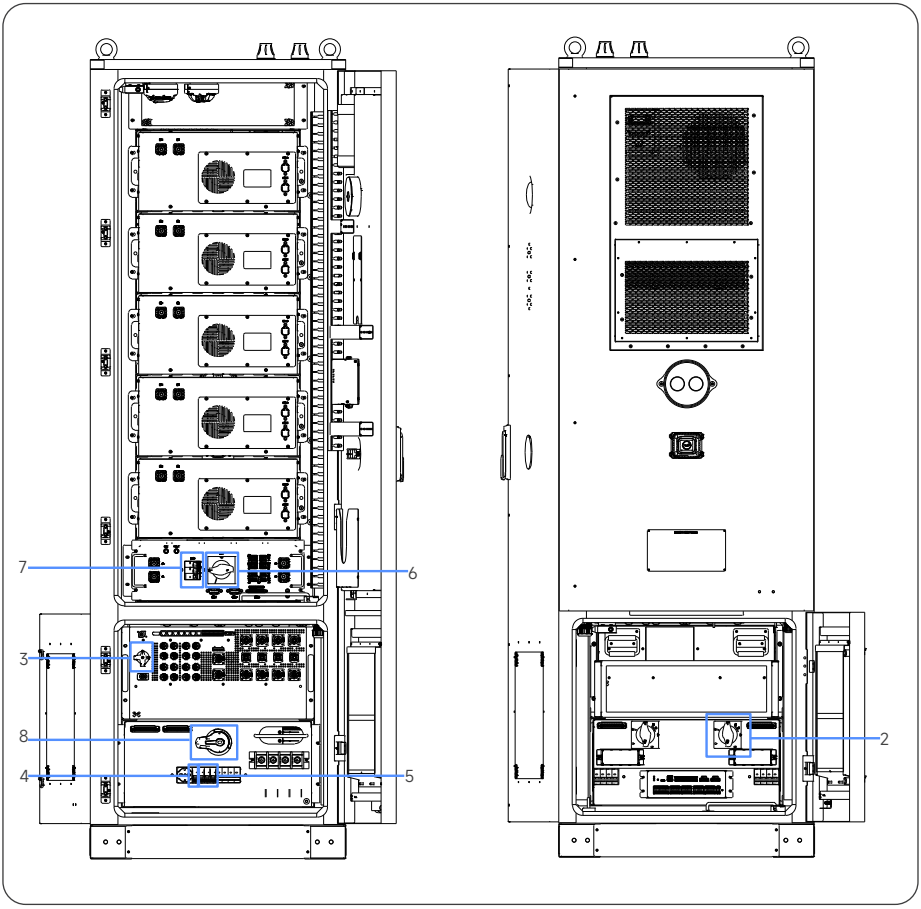
Step 4: Open air-conditioner miniature circuit breaker QF11.

Step 5: Open system auxiliary power supply breakers QF12, QF13 and QF14.

Step 6: Open disconnector QF1 on the high-voltage box.

Step 7: Open miniature circuit breaker QF2 for the high-voltage box auxiliary power supply.

Step 8: Open mains circuit breaker QF1.



8 Routine Maintenance

Fault	Possible causes	Measures
The system does not function properly.	• The secondary circuit of the system is not powered. • The circuit breaker of some equipment is open.	• Check if the monitoring power supply indicator light is on. • Refer to the monitoring electrical diagram to check if there is any equipment circuit breaker that is open. • If the fault persists, contact the manufacturer for after-sales service.
System shutdown due to individual cell over-voltage protection	• Single cell voltage exceeds the protection threshold • The battery sampling harness is damaged or the sampling plug connection is poor. • The BMU is faulty	• Reconnect the BMU sampler power supply plug, and then check the system battery voltage. If the battery is damaged, replace the damaged batteries.
System shutdown due to individual cell under-voltage protection	• Single cell voltage drops below the protection threshold. • The battery sampling harness has a short circuit or the sampling plug connection is poor.	• Reconnect the BMU sampler power plug, and confirm the air conditioner operates normally. • Contact the manufacturer for after-sales service if an abnormality persists.
Charge/discharge stopped due to over-temperature protection	• System temperature exceeds the protection threshold. • The temperature sampling harness is damaged or the sampling plug connection is poor. • The BMU is faulty.	• Reconnect the BMU sampler power plug, and confirm the air conditioner operates normally. • Contact the manufacturer for after-sales service if an abnormality persists.
Charge/discharge stopped due to low-temperature protection	• System temperature falls below the protection threshold. • The temperature sampling harness is damaged or the sampling plug connection is poor. • The BMU is faulty.	
Charge/discharge stopped due to overcurrent protection	System charge/discharge current exceeds the protection threshold.	• Check whether the inverter works normally. • Contact the manufacturer for after-sales service.
System insulation failure	• Insulation detection failure • System leakage	• Use the remote monitoring platform to shut down the system, then contact the manufacturer for service.

Fault	Possible causes	Measures
BCU and BMU communication failure BCU and BAU communication failure	• BMS system is not powered. • The corresponding CAN communication cable is loose.	• Verify that the BMS is powered normally. • Inspect the BCU and BMU communication plugs; check for loose connections or damaged wiring harnesses.
BMS and Inverter communication failure	• BMS system is not powered. • The inverter is not powered. • The corresponding communication network cable is loose.	• Check whether the power supply of the entire energy storage system is normal. • Check whether the corresponding BAU and inverter communication plug-ins are loose. • Check whether the wiring harness is damaged.
Air conditioner and BMS communication failure	• The energy storage system is not powered on. • The corresponding communication cable is loose.	• Check whether the entire energy storage system is powered normally. • Check whether the wiring harness is damaged.
Abnormal SOC display	• SOC not calibrated • SOC error accumulation	• Perform a complete charge and discharge cycle on the system.

9 Appendix

9.1 Technical Parameter

The standard model of this product is the HYX-EF100P2-50K-EU, which is configured with a 100 kWh battery and a 50 kW hybrid inverter to achieve a 2-hour system; the internal hybrid inverter can be optionally replaced with a 40 kW or 49.9 kW hybrid inverter of the same size.

Product Model	HYX-EF100P2-40K-EU	HYX-EF100P2-49.9K-EU	HYX-EF100P2-50K-EU
Battery			
Cell Type		LFP/314Ah	
Rated Energy		100kWh	
Rated Battery Voltage		320Vd.c.	
Battery Voltage Range		280 ~ 365Vd.c.	
Max. Charge/Discharge Current		180Ad.c.	
PV Input			
Max. PV Input Power	80kW	99.8kW	100kW
Max. PV Input Voltage		1000Vd.c.	
MPPT Operating Voltage Range		150 ~ 950Vd.c.	
Start-Up Voltage		180Vd.c.	
Max. PV Input Current per MPPT		40Ad.c.	
Max. Short-Circuit Current per MPPT		60Ad.c.	
Number of MPPTs / Strings per MPPT		4(2/2/2/2)	
AC Input & Output (On-Grid)			
Rated AC Output Voltage		3/N/PE, 220/380Va.c. 3/N/PE, 230/400Va.c.	
Rated Frequency		50/60Hz	
Rated AC Output Power	40kW	49.9kW	50kW
Rated AC Output Current	60.8Aa.c. @220Va.c. 57.7Aa.c. @230Va.c.	75.8Aa.c. @220Va.c. 72Aa.c. @230Va.c.	76Aa.c. @220Va.c. 72.2Aa.c. @230Va.c.
Max. Output Apparent Power	44kVA	49.9kVA	55kVA
Max. Output Current	66.9Aa.c. @220Va.c. 53.5Aa.c. @230Va.c.	75.8Aa.c. @220Va.c. 72Aa.c. @230Va.c.	83.6Aa.c. @220Va.c. 79.4Aa.c. @230Va.c.
Adjustable Power Factor		0.8 leading ~ 0.8 lagging	
THDi (Rated Power)		< 3% (rated power)	
General			
Dimensions (W × H × D)		750 × 2450 × 1260mm	
Weight		≈ 1410kg	
Operating Temperature Range		-30 ~ +55°C (>45°C derating)	
Relative Operating Humidity Range		0 ~ 100%RH (non-condensing)	
Max. Operating Altitude		3000m	

Product Model	HYX-EF100P2-40K-EU	HYX-EF100P2-49.9K-EU	HYX-EF100P2-50K-EU
Cooling Concept	Air cooling		
Ingress Protection	IP55		
Corrosion Protection Class	C5		
Noise	≤ 70dB		
Fire Suppression System	Aerosol, multi-sensor/water ingress, explosion-proof ventilation		
Communication Interface	Ethernet/Wi-Fi		
Standards Compliance			
Standards	CE, IEC 62619, IEC 62477, IEC 61000, UN 38.3		

9.2 Repainting the Cabinet

Prerequisites

- **Do not repaint in adverse weather**: Under unshielded outdoor conditions, repainting is strictly forbidden during rain, snow, strong winds, sandstorms, or other severe weather.
- **Repaint preparation**: Prepare the required paint according to the color chart provided at the time of delivery.

Repainting Instructions

The exterior of the cabinet shall be kept intact. If paint peeling occurs, repainting must be performed immediately.

Inspect the extent of paint damage on the cabinet, then prepare corresponding tools and materials. The quantity of materials shall be evaluated on-site based on the repainting requirements.

Extent of Paint Damage	Tools and Materials	Operation Steps
Shallow scratches (steel substrate not exposed); Non-washable stains or rust	• (For small-area touch-ups) Spray paint or paint, paintbrushes • (For large-area touch-ups) Fine sandpaper, anhydrous ethanol, cotton cloths, spray gun	Perform Steps 1 + 2 + 4 + 5
Deep scratches (primer damaged, steel substrate exposed)	• (For small-area touch-ups) Spray paint or paint, zinc-rich primer, paintbrushes • (For large-area touch-ups) Fine sandpaper, anhydrous ethanol, cotton cloths, spray gun	Perform Steps 1 + 2 + 3 + 4 + 5
Damaged logos or patterns	For damaged logos and patterns, please provide the logo size and color code. Find a local advertising spray painting supplier to develop a repair plan based on the logo size, color, and extent of damage, and then carry out the repair work.	
Impact dents	• For impact area ≤ 100mm^2 and depth < 3mm: Use unsaturated polyester resin putty (body filler) to fill the dent, and then follow the touch-up procedure for deep scratches. • For impact area > 100mm^2 or depth > 3mm: Find local suppliers to provide a separate repair plan based on the actual situation.	

NOTICE

- For a small number of scratches, small-area stains, or rust, spray paint or brush painting is recommended.
- For a large number of scratches, large-area stains, or rust, a paint spray gun must be used for painting.
- The paint film shall be as thin and uniform as possible; no droplet-shaped film is allowed, and the surface shall be kept smooth.
- About 30 minutes after repainting, further work can be carried out.

Operation Steps

Step 1: Lightly sand the damaged area with fine sandpaper to remove dirt or rust.





Step 2: Moisten a cotton cloth with anhydrous ethanol, wipe the sanded or to-be-repaired area to remove surface dirt and dust, then dry it with a clean cotton cloth.



Step 3: Repaint the damaged coating area with epoxy zinc-rich primer using a paintbrush or spray gun.

NOTICE

- If the substrate is exposed in the area to be repaired, an epoxy zinc-rich primer must be applied first. Once the paint is dry and the substrate is no longer exposed, an acrylic topcoat can be applied.
- Select either an epoxy zinc-rich primer or an acrylic topcoat matching the color of the cabinet's surface coating.

Step 4: Based on the extent of paint damage, select one of the following methods (spray paint, brush painting, or spray gun application) to evenly touch up the damaged coating area until no traces of damage are visible.

NOTICE

- Ensure the brushed paint film is as thin and uniform as possible; no droplet-shaped film is allowed, and the surface shall be kept smooth.
- For cabinet with patterns of different colors: Before touch-up painting, cover the areas of other colors (excluding the damaged paint) with tape and white paper to prevent contamination during the touch-up process.

Step 5: After brush painting, leave the area to stand for approximately 30 minutes, then check if the touch-up area meets the requirements.

NOTICE

- The color of the touch-up area shall match that of the surrounding area. Use a colorimeter to measure the color difference, which shall satisfy $\Delta E \leqslant 3$. If a colorimeter is unavailable, ensure there are no obvious edges between the retouched area and the surrounding area. The coating shall also be free of bulges, scratches, peeling, or cracks.
- For spray painting: It is recommended to apply 3 passes (cross coats) first, then check if the requirements are met. If not, repeat the spraying process until the requirements are satisfied.

Reference for Paint Supply Resources

Paint Requirement Item	Specific Requirements
Primer thickness	60 μm
Intermediate coat thickness	120 μm
Topcoat thickness	60 μm
Primer type	Epoxy zinc-rich paint
Intermediate coat type	Zinc-rich paint
Topcoat color code	RAL 9003 spray paint

9.3 Contact Information

If you have any questions about this product, please contact us.

In order to provide you with faster and better after-sales service, we need your assistance in providing the following information.

- Equipment model: _____
- Serial number of the equipment: _____
- Fault code / name: _____
- A brief description of the fault phenomenon: _____

Version: UM_HYX-EF100P2-40K/49.9K/50K-EU_V1.0-202610_EN
The manual is subject to change without notice as the product is improved.

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