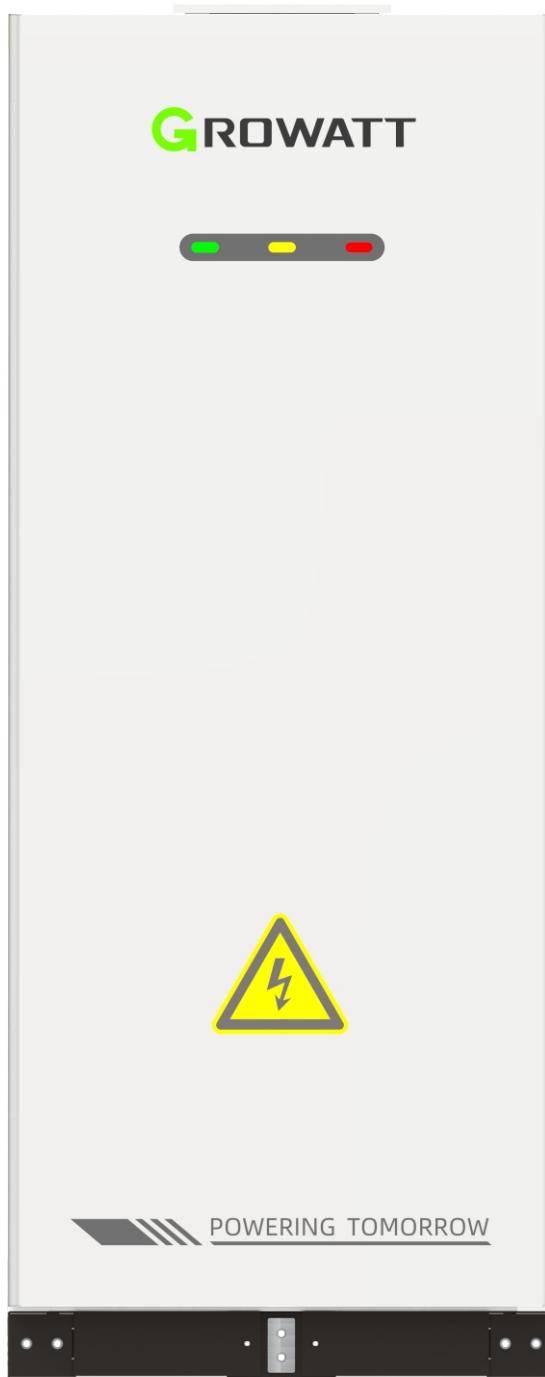


GROWATT

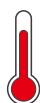
AXE 50.0-60.0H-1HT-S1

Quick Guide



Shenzhen Growatt New Energy Co., Ltd

Installation environment



Max.+55°C

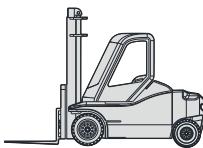


Min.-25°C

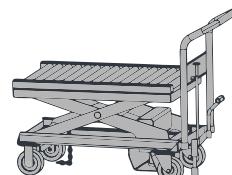


RH+5%~+95%

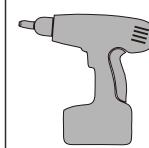
Installation tools



Forklift



Lifting trolley



working with M6/M8
bit holders & P2
Phillips bit

Electric screwdriver



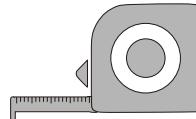
working with
16 mm drill bit



Hammer



Marker



Measuring tape



Wrench



Knife

Appearance & dimensions

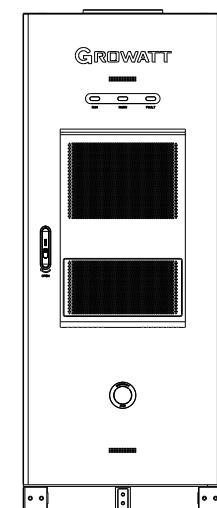
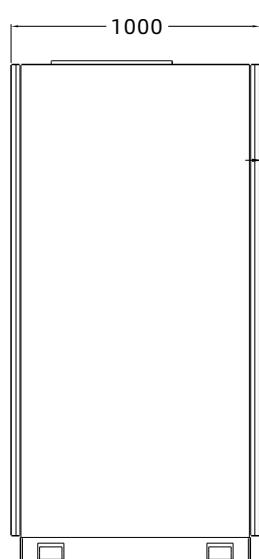
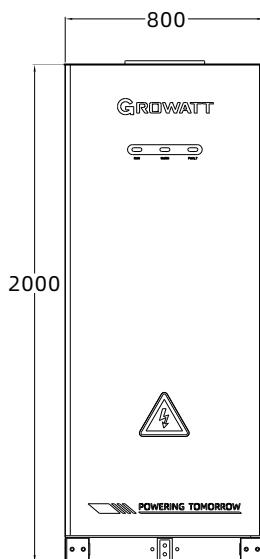
This battery cabinet comes in two versions: for the standard version, up to 12 battery modules can be installed; for the smaller version, a maximum of 8 battery modules can be installed.

Unit: mm

Front view

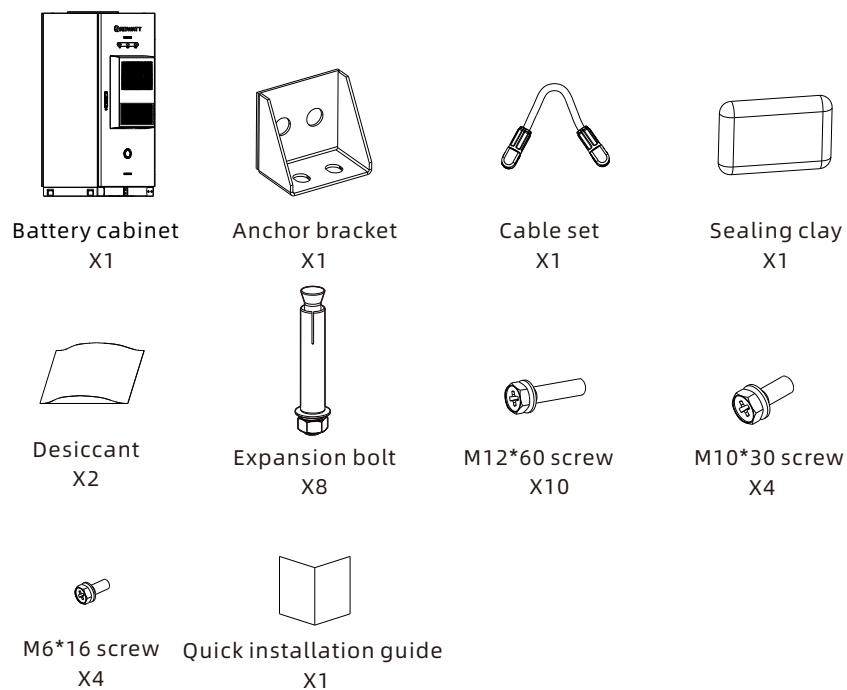
Side view

Rear view



1. Inspection upon delivery

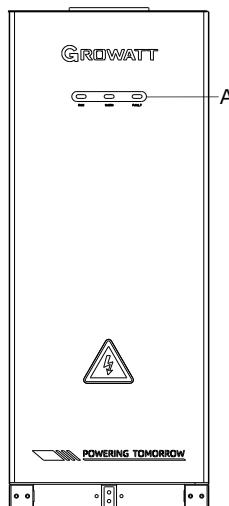
1-1 Check the accessories



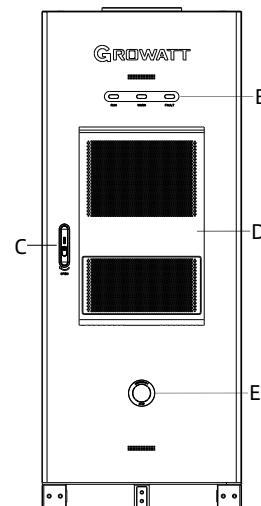
2. Introduction to the battery cabinet

2-1 Introduction to the panels of the battery cabinet

Front view



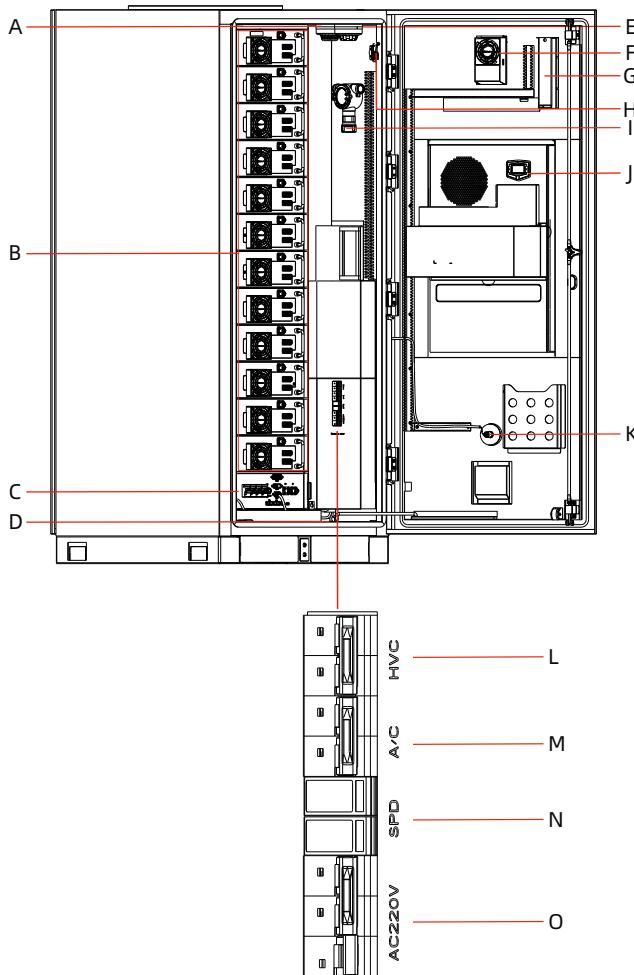
Rear view



No.	Component	Description
A	LED indicator of front	Indicates the operating status of the energy storage system Green: running normally; yellow: alarm; red: fault
B	LED indicator of back	Indicates the operating status of the energy storage system Green: running normally; yellow: alarm; red: fault
C	Lock	Safety gear
D	Air conditioner	Regulates temperature and humidity inside the cabinet.
E	Emergency stop	Emergency power off

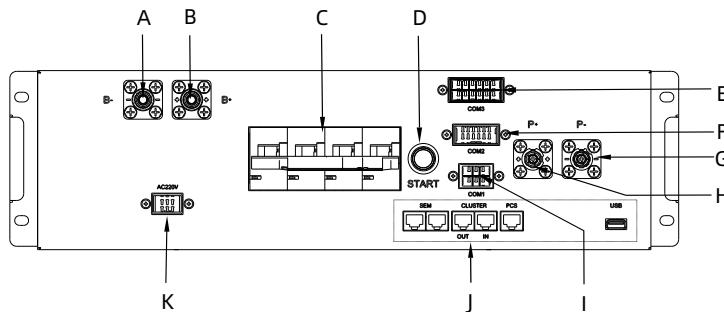
2-2 Introduction to intra-cabinet components

Configurations of installation modules



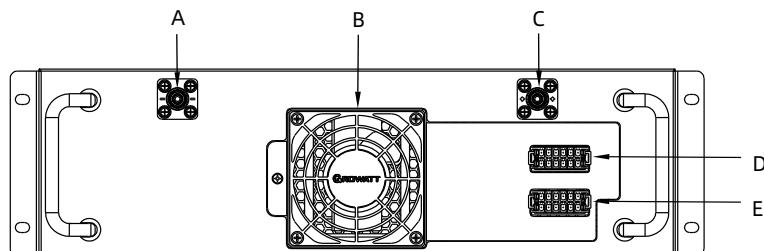
Position	Module	Description
A	Temperature sensor	Temperature detection
B	Battery pack	Energy storage device
C	High voltage box	Battery charge/discharge control device
D	Water leak sensor	Water leak detection
E	Smoke sensor	Smoke detection
F	Hydrogen Exhaust System	Exhaust of combustible gases from the cabinet
G	Aerosol	For firefighting
H	Access Control Sensor	Monitoring of door opening and closing status
I	Combustible gas detection sensor	Combustible gas detection
J	Air conditioner	Regulates temperature and humidity inside the cabinet.
K	Emergency stop	Emergency power off
L	HVC	High voltage box power input terminal
M	A/C	Air conditioner power input terminal
N	SPD	SPD (Surge Protective Device) input control terminal
O	AC220V	220VAC power input terminal

2-3 Introduction to the panel of the high voltage box



Position	Item	Description
A	BAT- power terminal	Connected to the negative power terminal of the battery cluster
B	BAT+ power terminal	Connected to the positive power terminal of the battery cluster
C	Circuit breaker	To control the battery output
D	Start button	To power on the energy storage system
E	COM3 communication terminal	Connected to the communication port of the battery pack's BM board and the 24V power supply port and heating film power line
F	COM2 communication terminal	Connected to panel indicators, tripping control board and emergency stop switch, etc.
G	PCS-power output terminal	Connected to the negative terminal on the DC side of the PCS
H	PCS+ power output terminal	Connected to the positive terminal on the DC side of the PCS
I	COM1 communication terminal	Connected to the RS485 communication port and the 24V power supply port of the EM (Environmental Monitor) board
J	Common wiring terminals	Connected to communication terminals of PCS, SEM and USB
K	Power supply port	Auxiliary AC 220V power input

2-4 Introduction to the panel of the battery pack



Position	Item	Description
A	Negative battery pack terminal	Negative battery pack connector
B	Cooling fan	For battery heat dissipation
C	Positive battery pack terminal	Positive battery pack connector
D	COM1 communication terminal	For communication between battery packs, and power supply
E	COM2 communication terminal	For communication between battery packs, and power supply

3. Basic installation requirements

3-1 Safety clearance requirements

Unit: mm

Energy Storage System Installation Environmental Requirement:

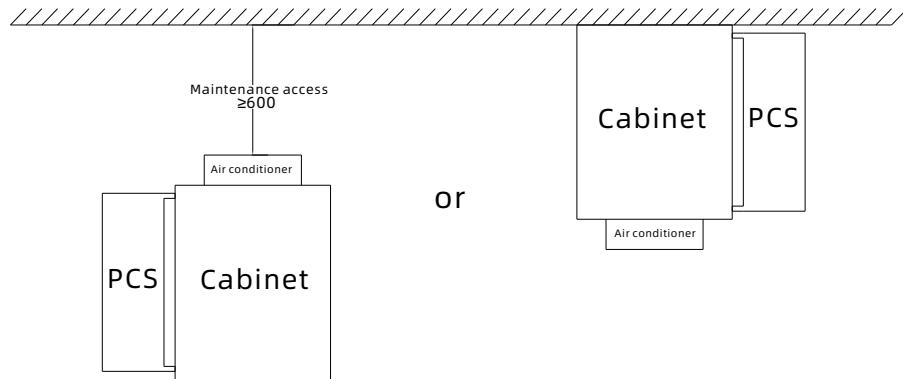
The ESS may corrode if installed in areas with salt damage or pollution. The ESS is suitable for the following or better environments

1. Outdoor environments more than 2000 meters away from the coast . Installation within 2000 meters of the coast is not recommended. (If installation is necessary, consult with the distributor or our company's engineer for confirmation).
2. More than 3000 meters away from heavy pollution sources . such as smelters, coal mines, and thermal power plants.
3. More than 2000 meters away from moderate pollution sources . such as chemical plants, rubber factories, and electroplating facilities.
4. More than 1000 meters away from light pollution sources . such as food processing plants, leather factories, heating boilers, slaughterhouses, centralized garbage dumps, and sewage treatment stations.

A single cabinet:

For maintenance purposes, please leave a clearance of not less than 600 mm from the back door of the cabinet, as shown in the figure below.

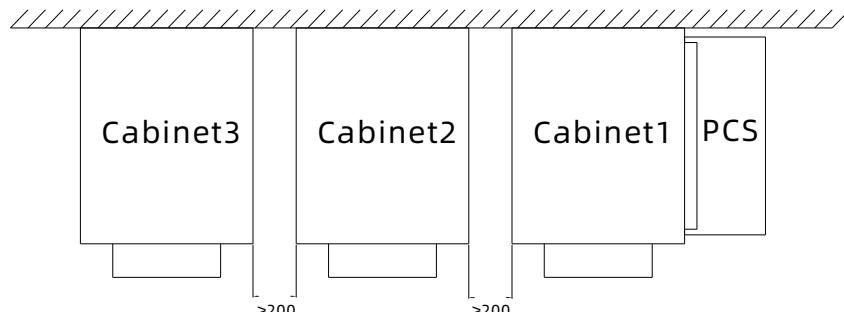
Top view



Multiple cabinets in parallel:

A maximum of 4 cabinets can be configured in parallel and the cabinets can be mounted side by side with no gap in between. The figure below takes the configuration of three cabinets in parallel working with the PCS (WIT-30-55K-XHU) as an example:

Top view

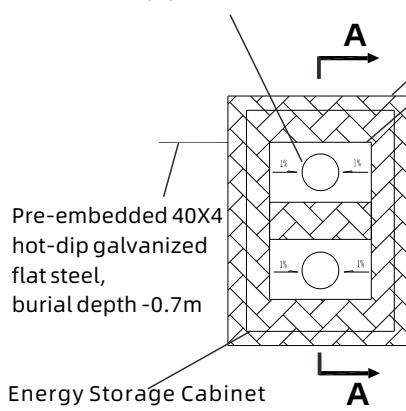


4. Transportation and installation

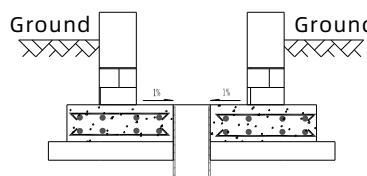
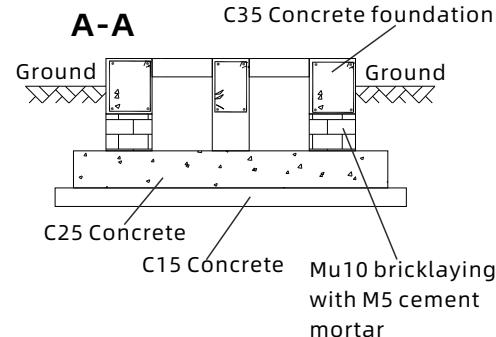
4-1 Level the fundation

Φ200mm PVC pipe catch basins using
Φ100mm PE pipe to rainwater wells

Paint yellow and black crosswalk around
the exposed foundation on the ground.

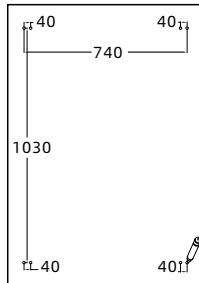


Cement mortar on the inner
wall of cable trench

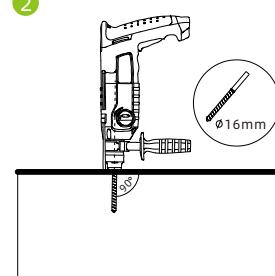


4-2 Drill holes into the ground

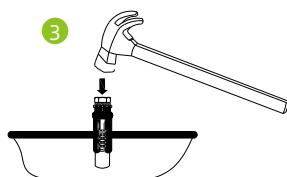
①



②



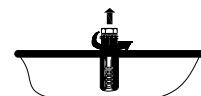
③



④



⑤



- ① Mark hole positions at the pre-determined installation location according to the dimensions indicated below.
- ② Drill holes at the marked positions.
- ③ Insert the expansion bolts into the holes.
- ④ Tighten the bolts to expand the sleeve.
- ⑤ Remove the bolts.

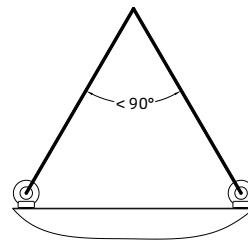
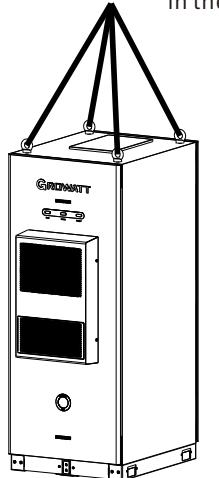
4-3 Transport the battery cabinet

On-site transportation of cabinets can be used lifting or forklift according to the actual situation.

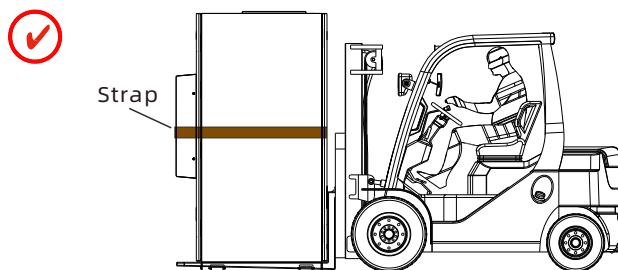
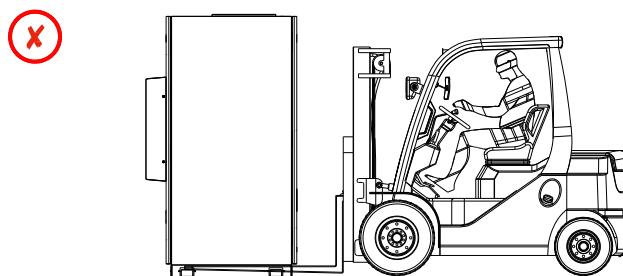
1. Adopt lifting to transport the cabinet:

Pass the lifting rope through the 4 rings on the top of the cabinet, use the lifting equipment to lift the cabinet by the lifting rope and move it to the designated position. During the process, keep it stable and prevent it from shaking.

Please make sure the lifting rope is long enough to make the angle of projection of the lifting rope in the vertical plane between the two rings is less than 90°.

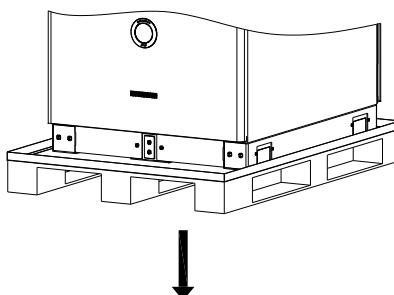


2. moving the equipment with a forklift secure it properly according to the actual situation to avoid tip-overs. Note: Forklifts cannot transport racks with batteries installed.

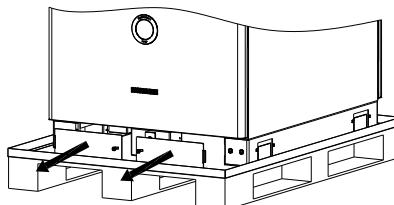


4-4 Install the battery cabinet

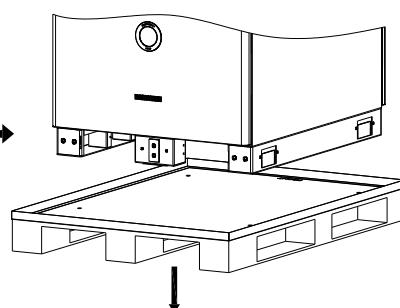
① Preparation before installing cabinets



② Remove the front and rear covers of the base

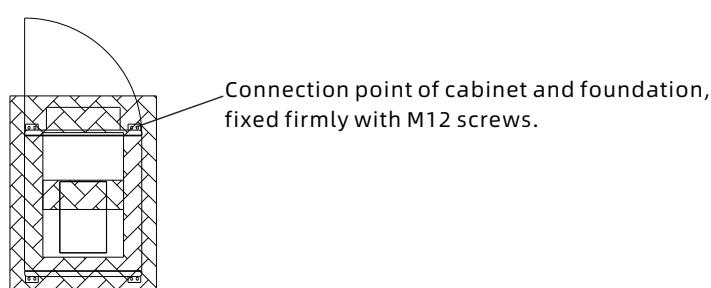
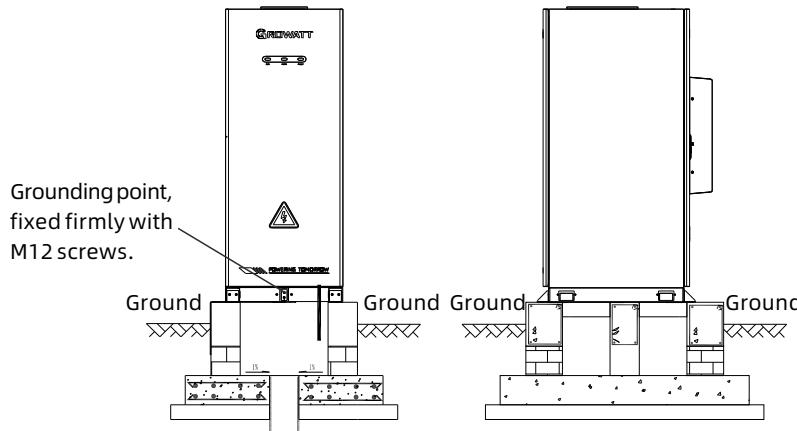


③ Remove the pallet



- ① Check the appearance of the cabinet for good condition.
- ② Loosen the screws. Remove the front and rear covers of the base.
- ③ Remove the pallet after the cabinet has been lifted.

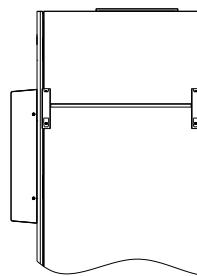
4. Install the cabinet on the foundation



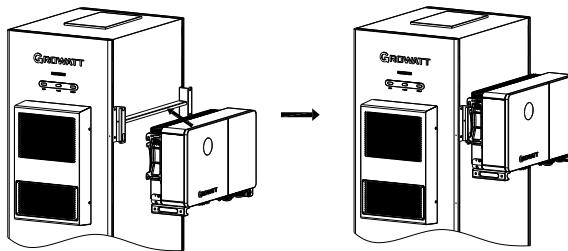
5. Assembling PCS

This cabinet is compatible with various PCS.

- 1 Take connecting to the WIT30-55K as an example.
Assemble the PCS bracket

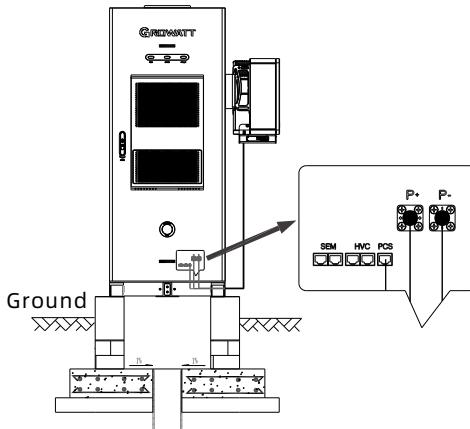


- 2 Use the tool to lift the PCS and hang it on the bracket. Tighten the screws

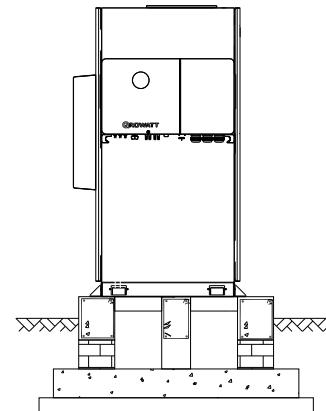


- 3 The single cabinet side mount PCS is as follows, connecting the cables.

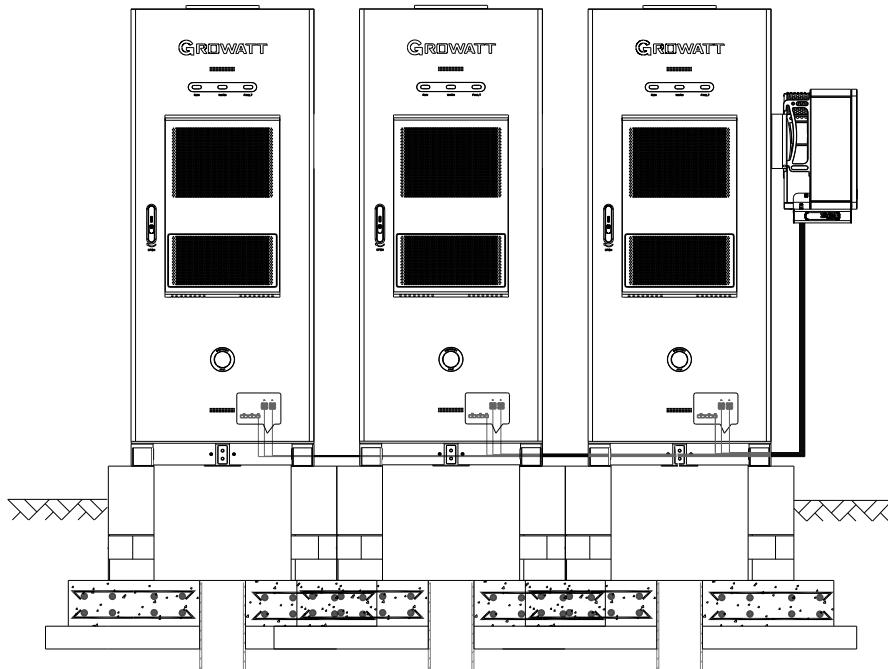
Rear view



Side view



- 4 WIT 29.9-50K-XHU supports the connection of up to 3 energy storage cabinets in parallel.



6. Check before power-on

6-1 Routine check

No.	Checking item	Acceptance criteria
1	Equipment appearance	<ul style="list-style-type: none">The equipment is intact, free from damage, rust or paint loss. If the paint flakes off, please re-paint the spotted area.Equipment labels are clear and damaged labels should be replaced in time.
2	Cable appearance	<ul style="list-style-type: none">The cable sheath is properly wrapped with no visible damage.The cable conduits are intact.
3	Cable connection	<ul style="list-style-type: none">Cables are connected at the designate positions.Wiring terminals are prepared as required and connected reliably.Labels on both end of each cable is clear and facing toward the same direction
4	Cable routing	<ul style="list-style-type: none">Electrical cables and extra low voltage cables are routed separately.The cables are neat and tidy.Cable tie joints are evenly cut without burs.Leave the cable slack at bending points to avoid stress.Cables are routed neatly without twists or crossovers in the cabinets.

6-2 Battery cabinet installation inspection

Cabinet inspection

No.	Checking item	Acceptance criteria
1	Installation	<ul style="list-style-type: none">Installation complies with the design requirements.The cabinet is level, and each door opens properly.
2	Appearance	<ul style="list-style-type: none">The surface of the cabinet is free from cracks, dents and scratches. If the paint flakes off, re-paint the spotted area.
3	Cabinet grounding	<ul style="list-style-type: none">Each cabinet has at least two grounding points and should be grounded reliably. The site ground resistance should be less than or equal to 0.1Ω.
4	Label	<ul style="list-style-type: none">Labels are correct, clear and complete.

6-3 Intra-cabinet inspection

No.	Checking item	Acceptance criteria
1	Circuit breaker	The circuit breakers are OFF.
2	Cable	The bolts for securing the cables have been tightened and no loose cable connections.
3	Battery packs	All battery packs are intact.
4	Foreign object	Foreign objects, such as tools and installation leftovers are removed from the cabinet.
5	Cabinet grounding	The grounding conductor is reliably connected to the cabinet's grounding terminal block or copper bar.

7. Power on/off the equipment

7-1 Power-on procedure

1	Test the voltage between BAT+ and BAT- with a multimeter.	Voltage range: 603.2 -738.4V
2	Turn on the HVC's DC load switch	
a: Before turning on the internal switches of the auxiliary power supply in the energy storage system, ensure that the AC auxiliary power supply voltage is within the normal range (220V±10%).		

7-2 Commissioning

Prerequisites

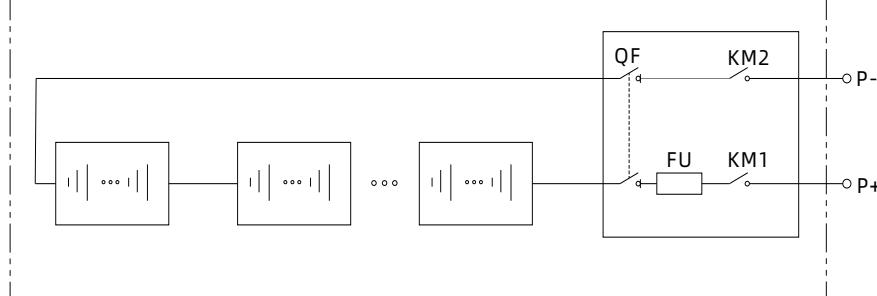
- 1) All devices on site have passed the on-site tests.
- 2) The system has been powered on and no alarm/fault is reported.
- 3) The commissioning tools are available on site.

7-3 Power-off procedure

1	Turn off the AC power supply, including the HVC and socket
2	Turn off the main breaker of the auxiliary power supply in the AC distribution box.
3	Turn off the HVC's DC load switch.
4	Turn off the DC circuit breaker of the high voltage box.

8. Electrical schematic

Primary schematic diagram of the energy storage system



9. Service and contact

Shenzhen Growatt New Energy Co., Ltd.

4-13/F, Building A, Sino-German (Europe) Industrial Park,
Hangcheng Blvd, Bao'an District, Shenzhen, China

E service@growatt.com

W en.growatt.com

For local customer support, please visit <https://en.growatt.com/support/contact>



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