ZOE
ENERGY STORAGE

Quick Installation Guide

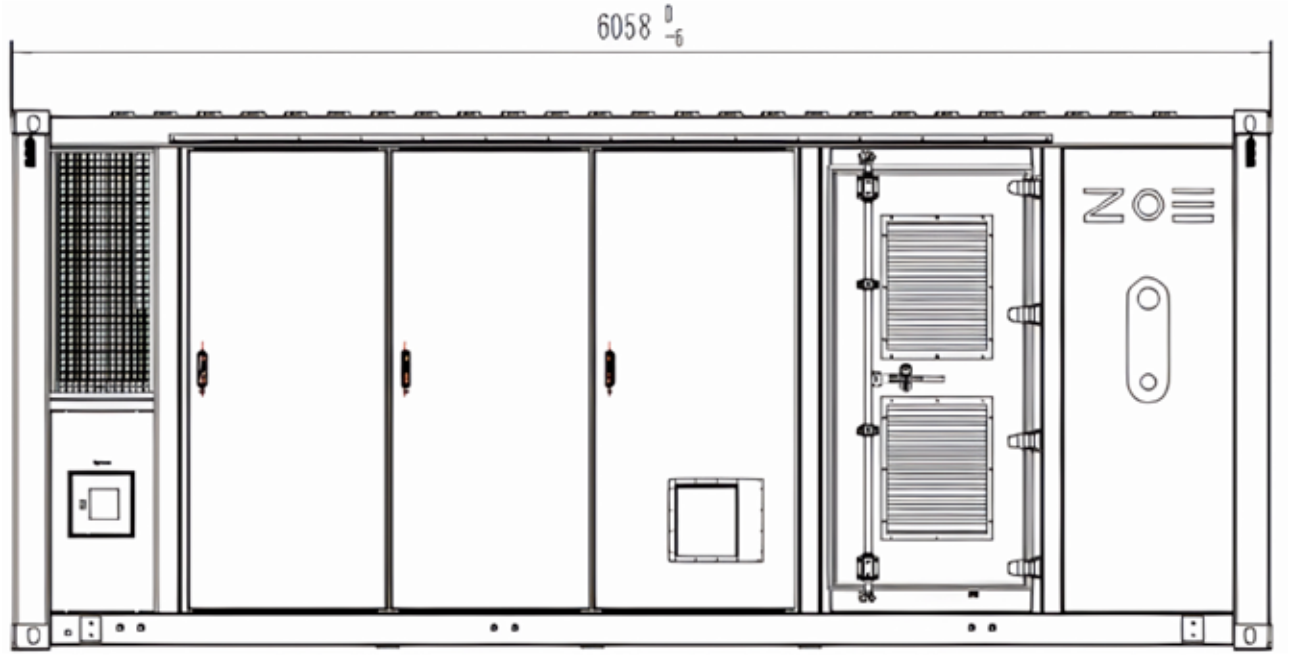
Z BOX-P ALL-IN-ONE ESS Container

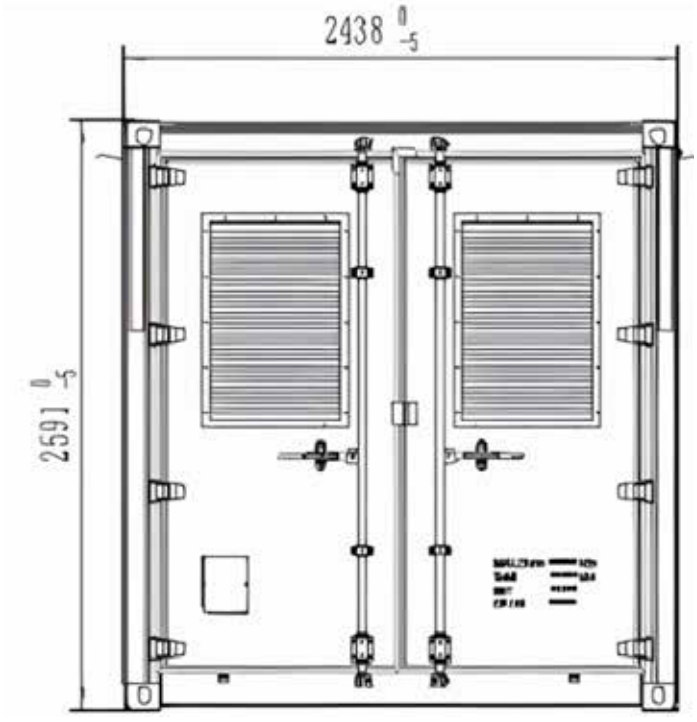
P1300-1H

Product Model: P1313L1H-A-EUU

Please consult the User Manual for more information

1. Product features

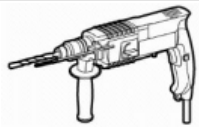
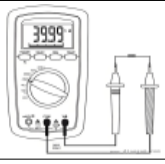
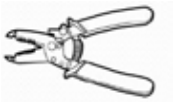
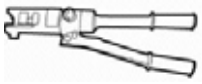




Weight (T)	20±0.5
Dimensions (W*D*H)(mm)	6058*2438*2591

Figure 1-1 Dimensions

2. Tools

SN	Name	Purpose	Picture
1	Cordless drill + Drill bit Φ16	For drilling a hole for an expansion bolt	
2	Expansion bolt (SUS316 stainless steel M16X100)	For connecting foundation and container fasteners	
3	Socket + Screwdriver set	For installing the grounding wire, power line, rubber conduit, and forklift hole cover	
4	Torque wrench	For confirming the fastener torque	
5	Torque marker	For torque marking	
6	Cable tie	For cable fastening	
7	Spirit level	For container leve-ling	
8	Multimeter	For continuity te-sting	
9	Wire stripper	For stripping the insulation from ca-ble ends	
10	Hydraulic crim-ping tool	For crimping ter-minals and cables	
11	Diagonal cutting pliers	For cutting cables	
12	Tape measure	For dimensional measurement	
13	Hot air gun	For shrinking heat shrink tubing	
14	Heat shrink tu-bing	For protecting the wire and terminal connections	
15	Crimping pliers	For crimping ter-minals and cables	

Remarks: It is recommended for on-site installation that a full set of No. 3 screwdriver sockets are provided.

3. Requirement on installation space

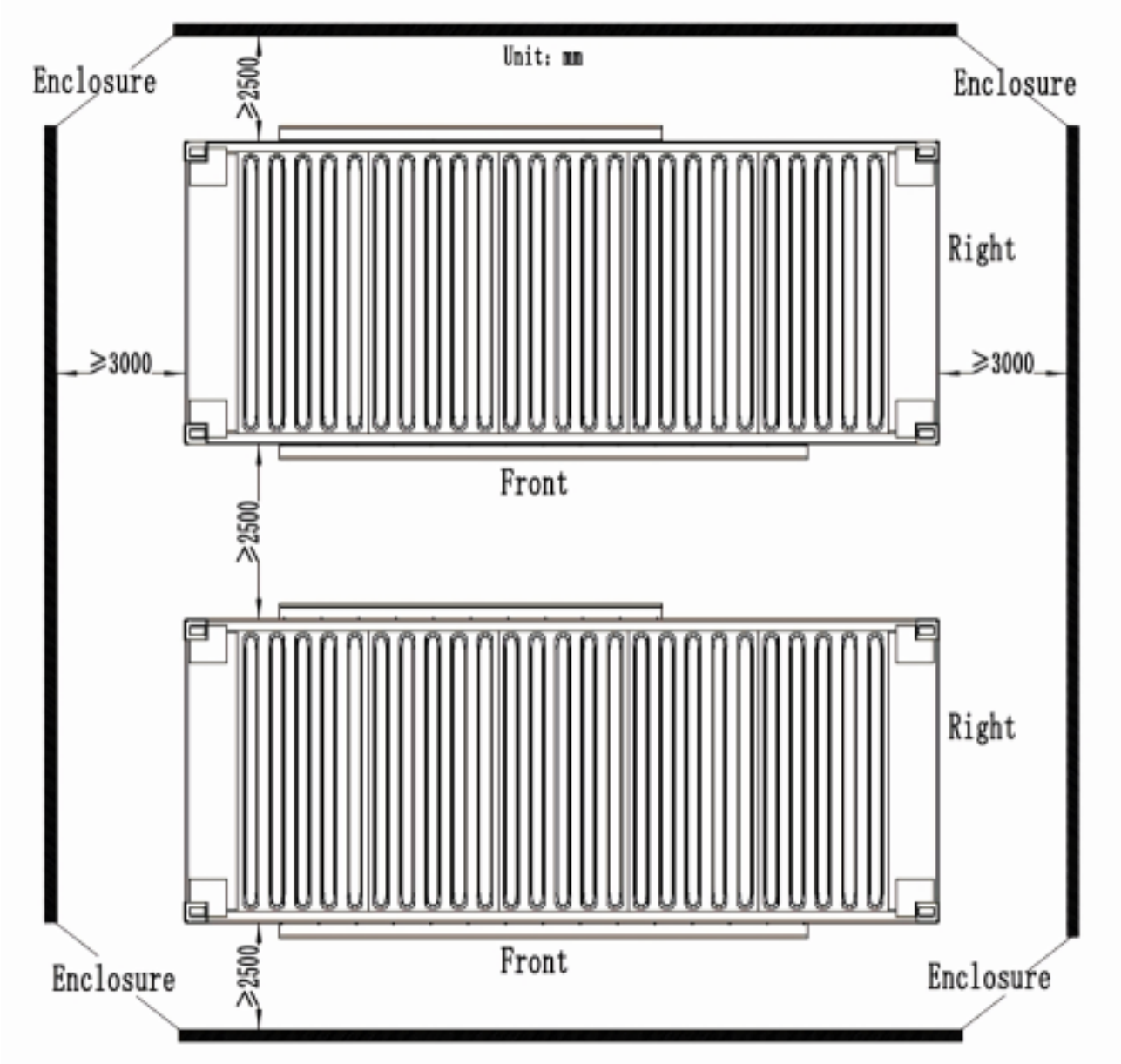


Fig. 3-1 Requirement on installation space

· The container must have a clearance of above 2,500mm reserved in front and back for maintenance access

· On the left and right sides of the container, above 3,000mm clearance is required for ventilation

4. Floor requirements

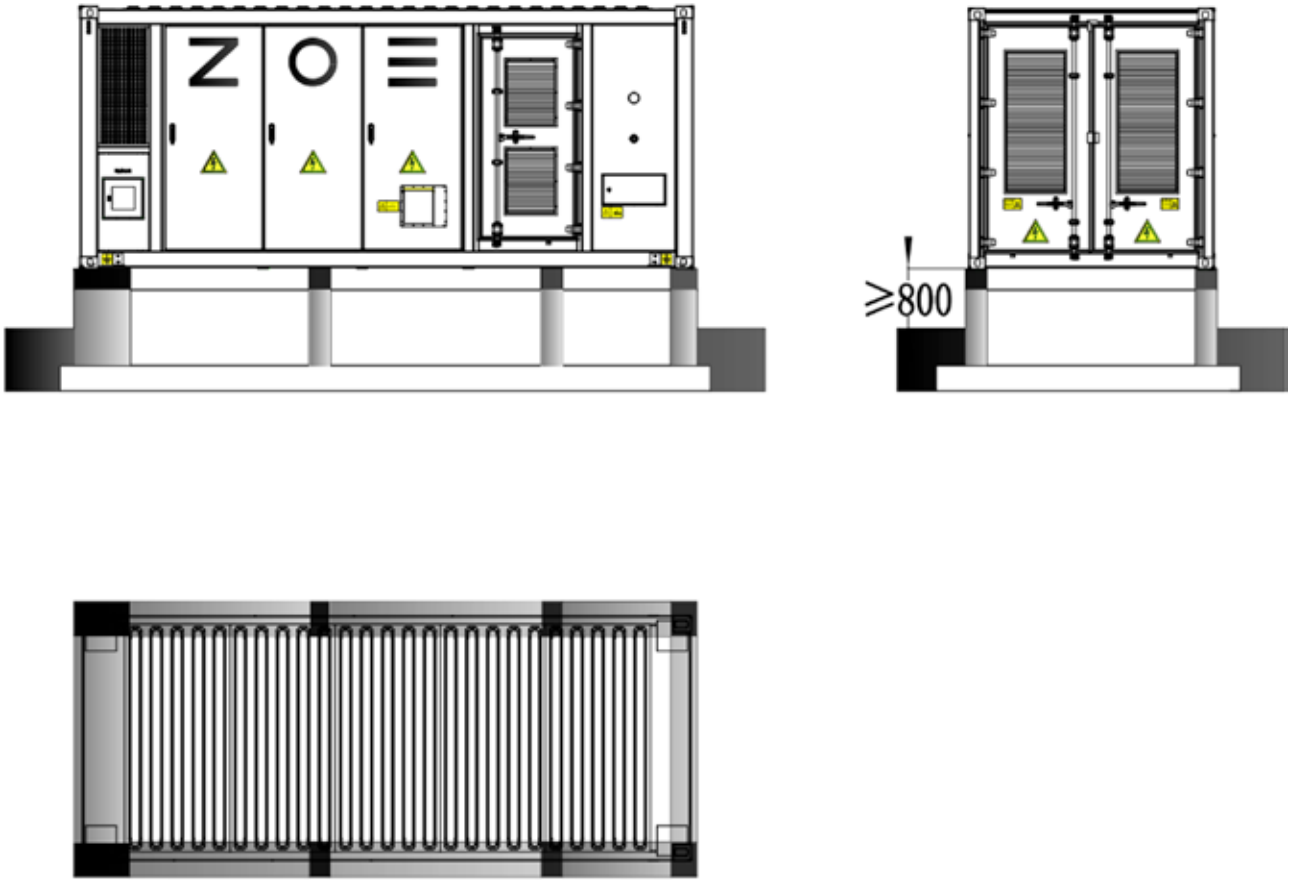


Fig. 4-1 Reference foundation drawing

· For foundation of the container, it is recommended to use a layer of cobblestone compacted to prevent settlement, with a 6400*2850mm planar space.

· The container foundation should be preferably above 800mm high, and have a load-carrying capacity of 20T

· After the container is set onto the foundation, mark, with a fastener, where holes are to be drilled and then drill holes by using an electric driller for embedding expansion bolts

· Use M16 nuts, spring washers and flat washers (for a total of 12 screws) to lock the container and fixtures

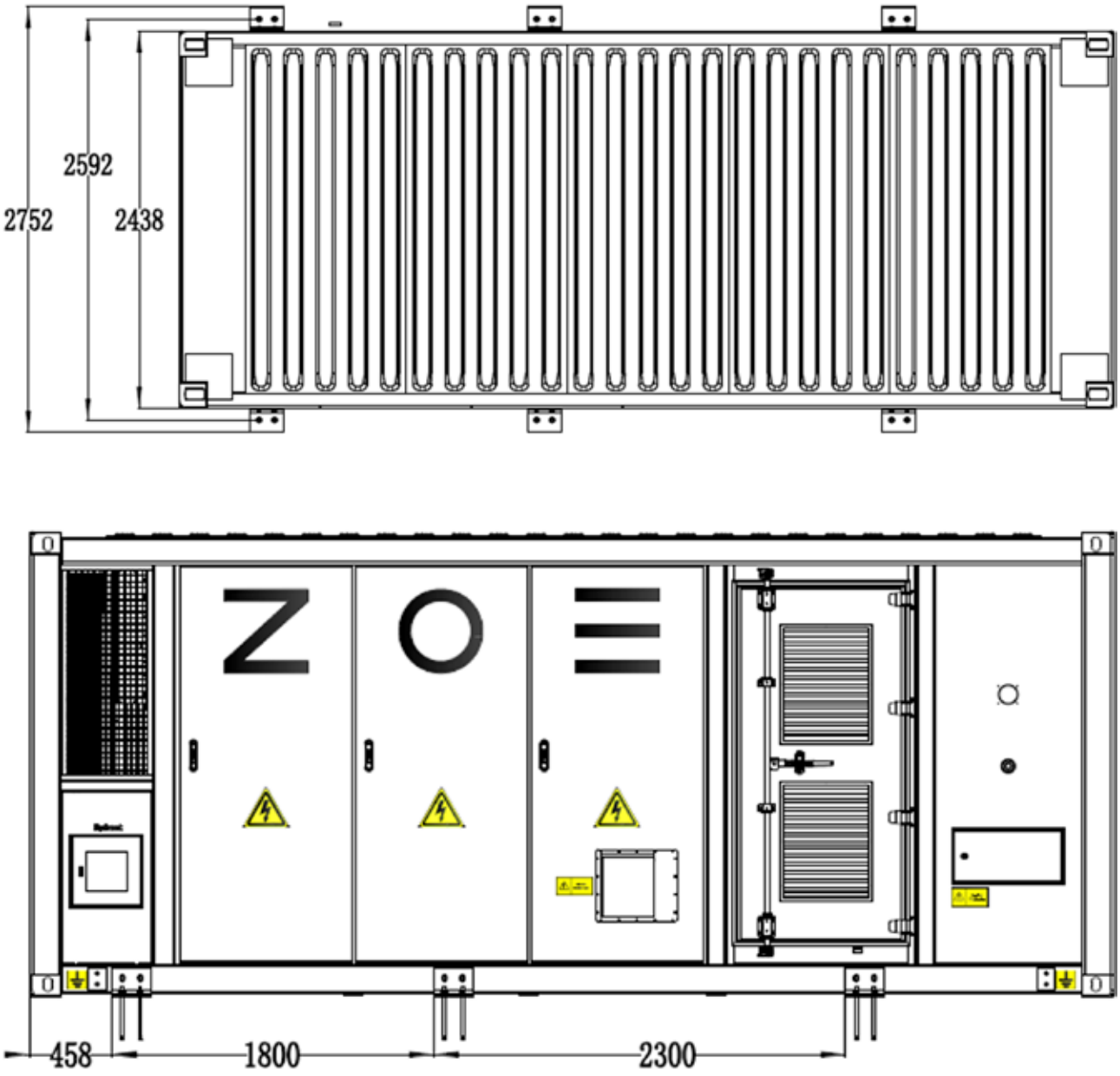
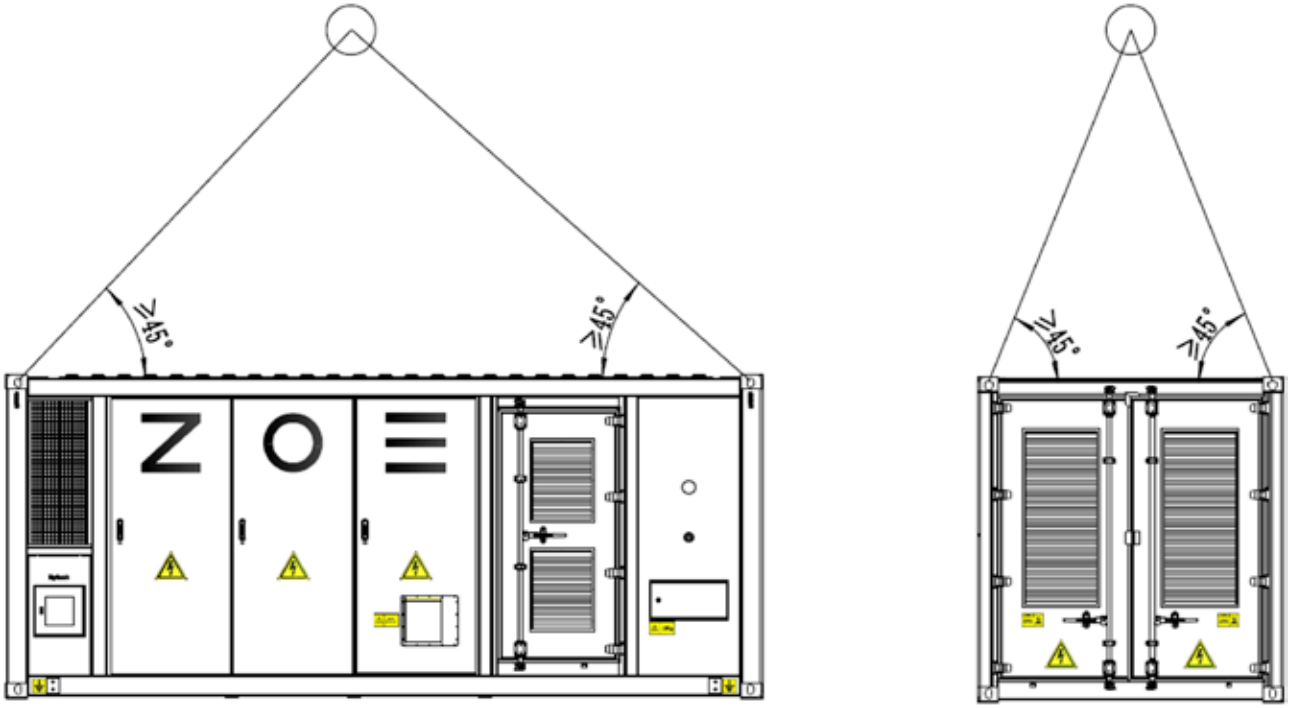


Fig. 4-2 Location plan of embedded screws

5. Lifting diagram

· A crane (recommended lifting capacity: 30 - 80 tons) will be used on-site to slowly lift the liquid cooling energy storage system as a whole onto the pre-prepared foundation. The specific lifting method is shown in the diagram below.



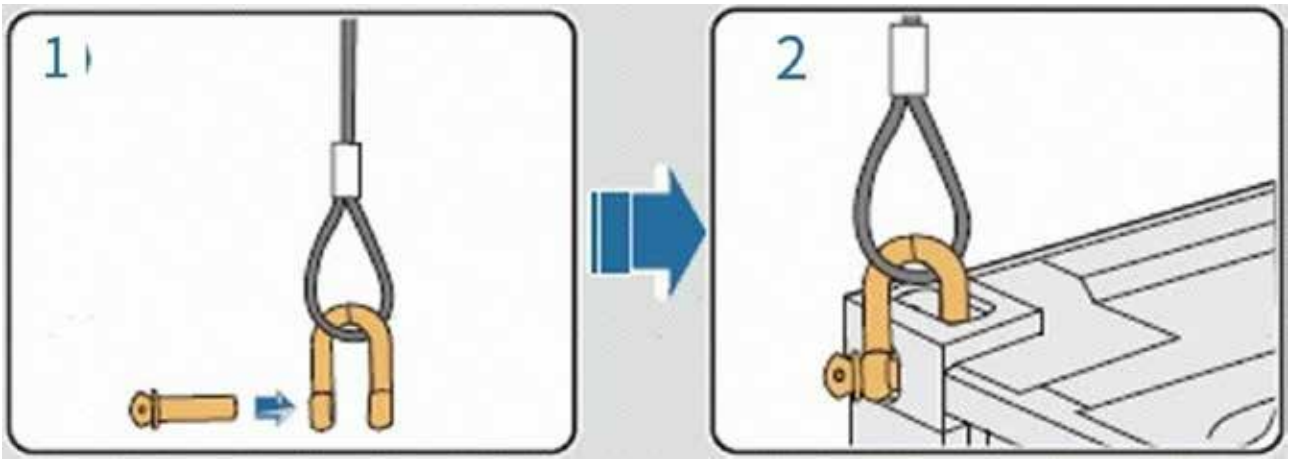


Fig. 5-1 Lifting diagram

· Load the four buckles into the lock holes on the top of the container, lock the buckles to start lifting

· The lifting rope should run through the four buckles to form an included angle of above 45°

· Lift the cabinet slowly via the rope (capacity: ≥25T) and put it down gently.

6. Cable installation requirements

6.1 Grounding

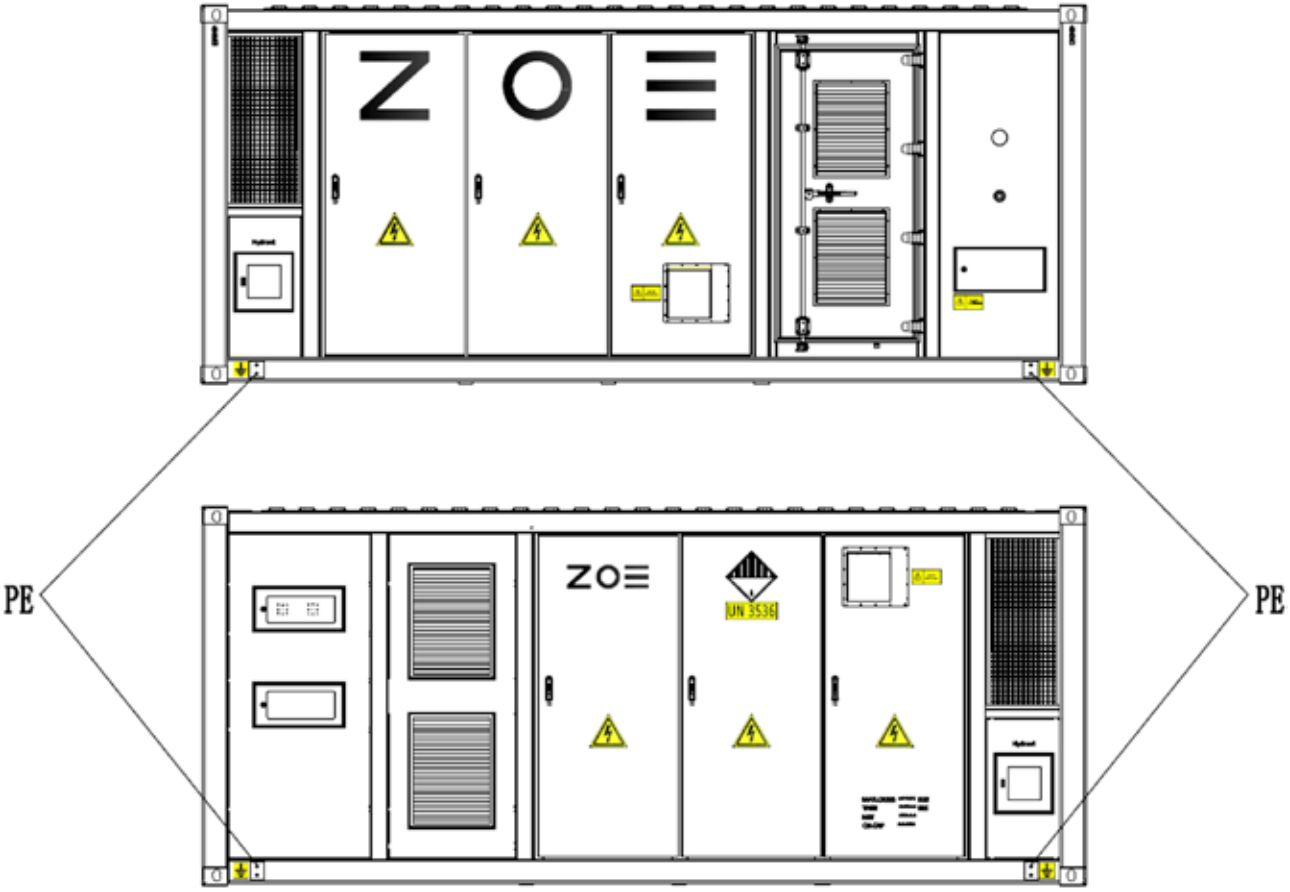


Fig. 6-1 Distribution of container grounding points

For grounding, three combinations of M10*20 bolts are used for fixation, with a torque of 31 N·m.

6.2 External wiring access point on the container

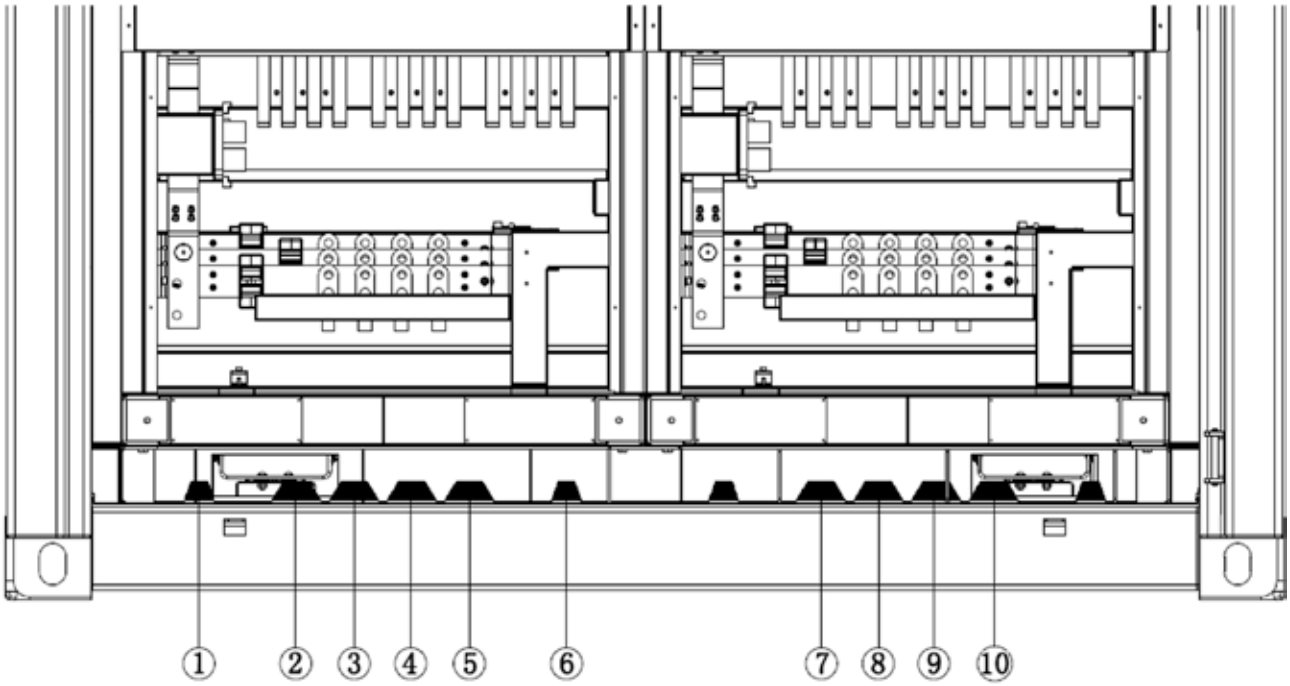


Fig. 6-2 Distribution of external wiring access points

S/N	Definition	Recommended cable (copper)	Recommended quantity
①	Communication incoming line	/	/
②	Grid incoming line	AWG 3*#250/300MCM	1 piece
③		AWG 3*#250/300MCM	1 piece
④		AWG 3*#250/300MCM	1 piece
⑤		AWG 1*#250/300MCM	1 piece
⑥	External power supply incoming line	AWG 4*#4	1 piece
⑦	Grid incoming line	AWG 3*#250/300MCM	1 piece
⑧		AWG 3*#250/300MCM	1 piece
⑨		AWG 3*#250/300MCM	1 piece
⑩		AWG 1*#250/300MCM	1 piece

Table 1 Comparison of external wiring points

· Definition of Cable

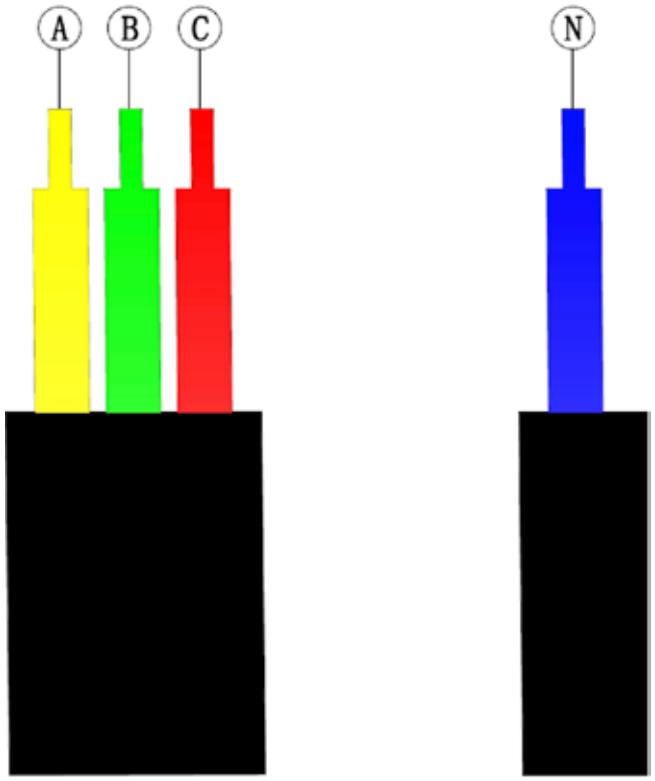
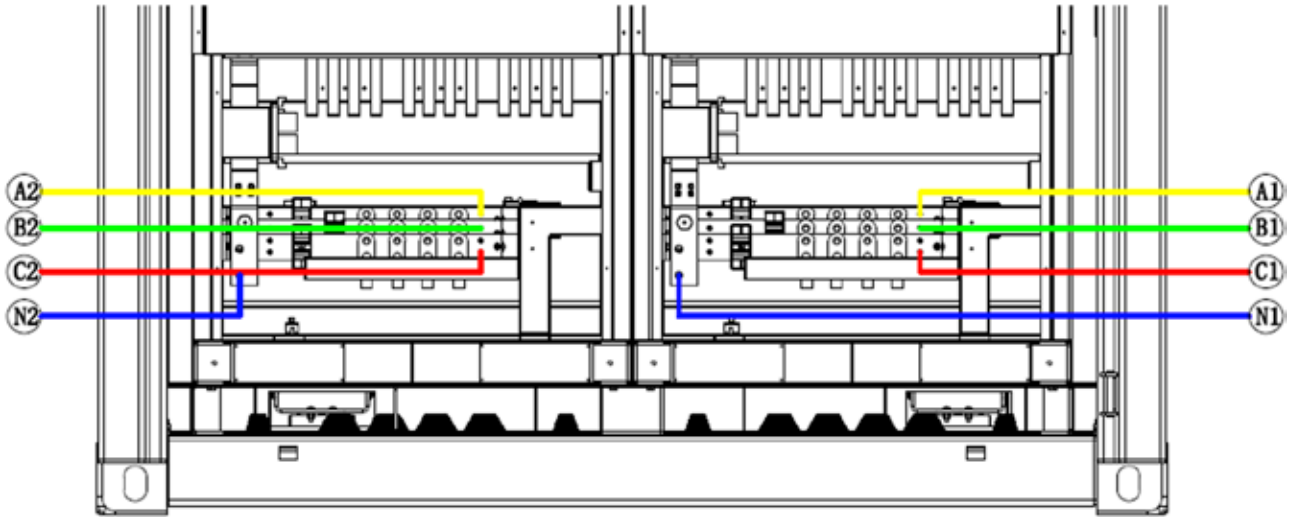


Fig. 6-3 Definition of 3-core cable Definition of 1-core cable

6.3 Definition of grid port

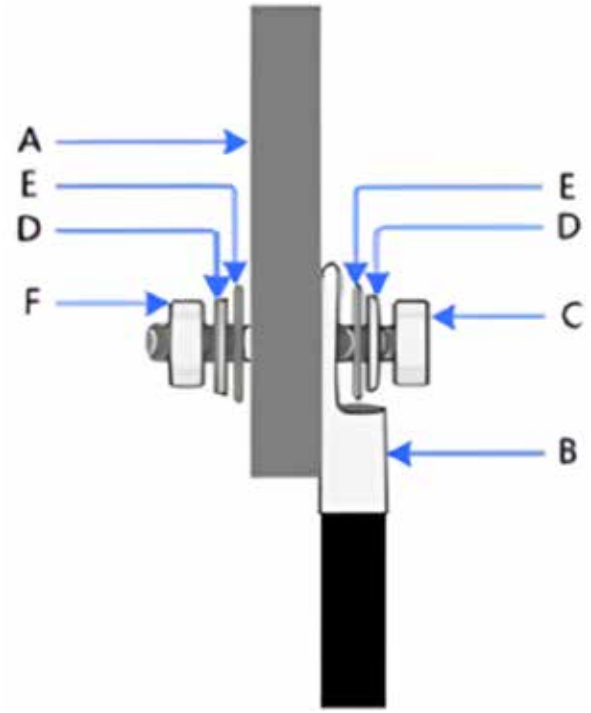


PCS#1 wiring definition	PCS#2 wiring definition
A1	A2
B1	B2
C1	C2
N1	N2

Table 2 Definition of wiring for grid port

· Cable runs from the bottom of the container through the tower-shaped bushing (Fig. 6-2, ports No. 2, 3, 4, 5, 7, 8, 9 and 10) into the PCS cabinet

· The cable and busbar connection specifications are shown in the following diagram



A	B	C (M16)	D	E	F
Busbar	Terminal	Screw	Butterfly Washer	Flat Washer	Nut

Fig. 6-5 Diagram of cable and busbar connection specification

6.4 External power supply

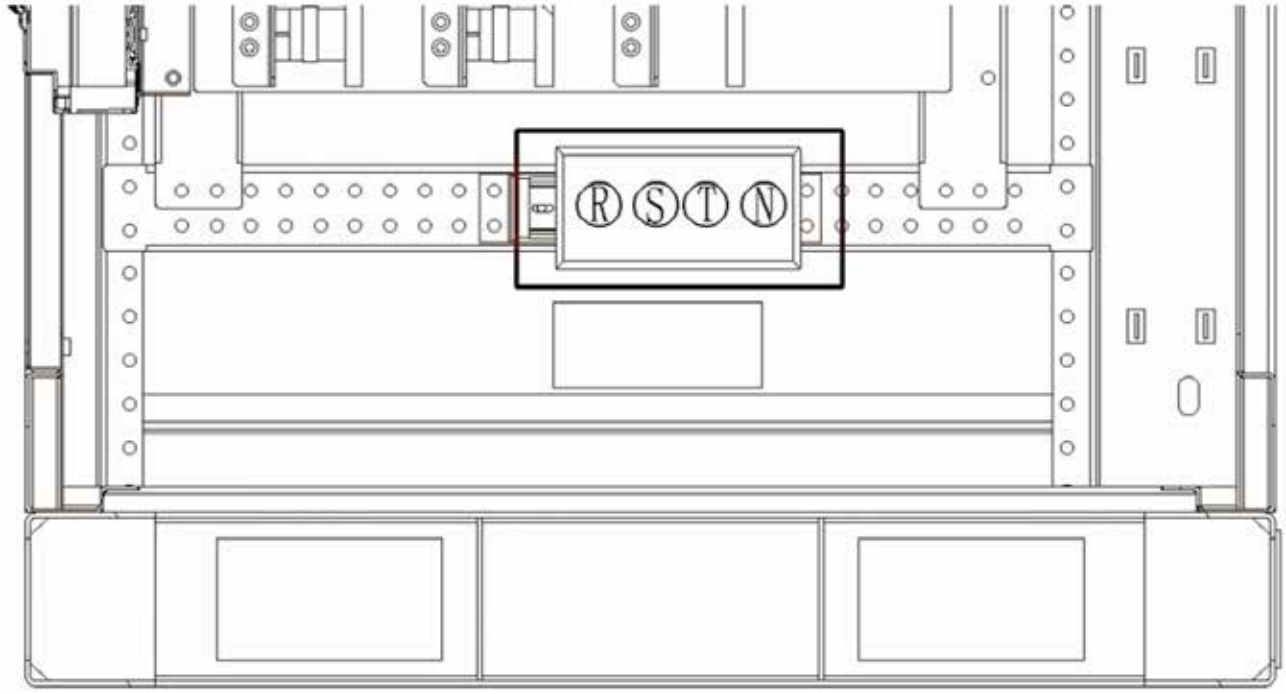


Fig. 6-6 Diagram of access point location for external power supply

· For external power supply, it is recommended to use AWG 4*#4 power cable, which should run from the bottom of the container through the tower-shaped bushing (Fig. 6-2, port 6) into the PCS cabinet

· No connection is required if it is internally powered.

6.5 Communication cable

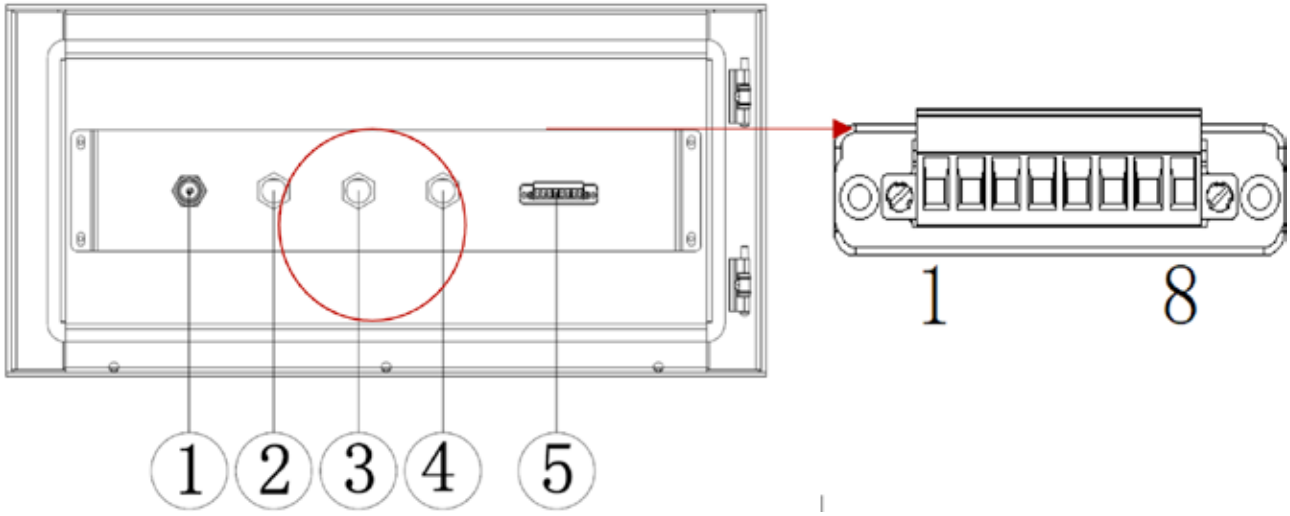


Fig. 6-7 Diagram of access point location for communication cable

S/N	Definition	Remarks
①	START/STOP	Button
②	FFR/FCR	Network port
③	EMS	Network port
④	WEB	Network port for host computer debugging
⑤	XP7	Terminal

Table 3 Definition of communication cable wiring point

Equipment No.	Location No.	Definition	Description
XP7	1	485A	METER
	2	485B	
	3	485G	
	4	/	
	5	DO1	Output to third-party EMS
	6	DO2	
	7	DI1	Input from third-party EMS
	8	DI2	

· For communication cables No. 1, 2 and 4, it is recommended to use Cat6A STP cable, which should run from the bottom of the container through the tower-shaped cable bushing (Fig. 6-2, port No. 1), ending with crimped RJ45 connectors. The general installation is shown below

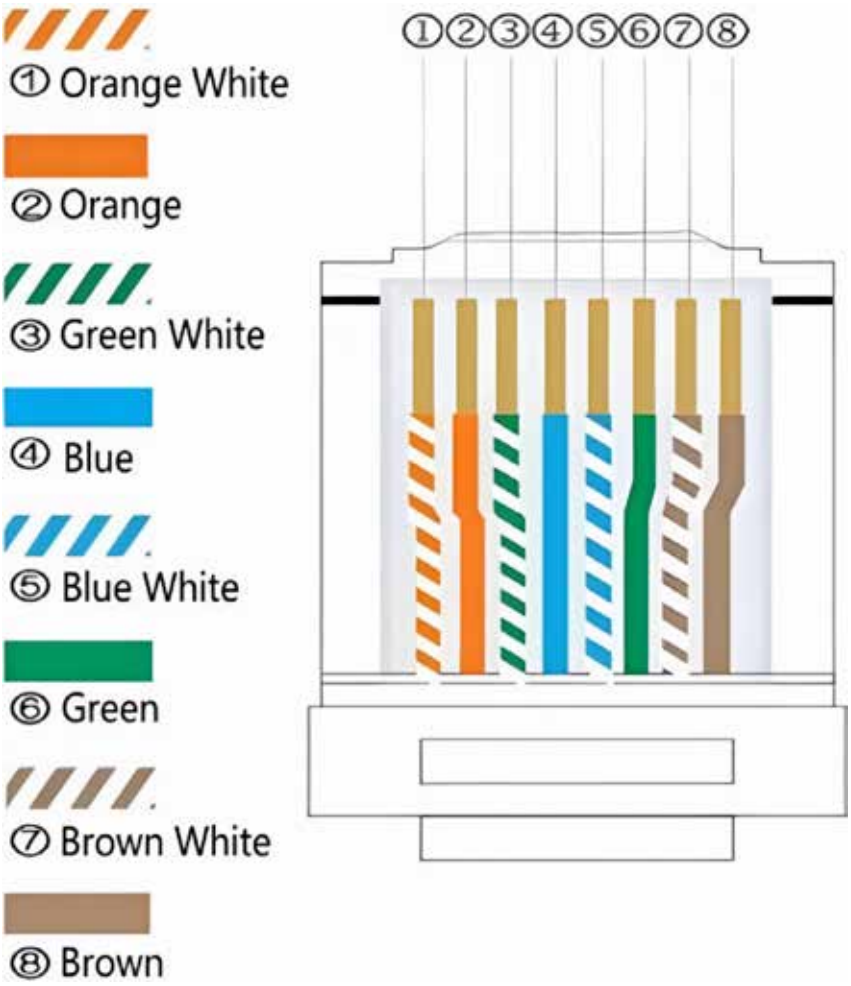


Fig. 6-8 Wiring diagram of 8-core network cable

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