

# Quick Installation Guide

ALL-IN-ONE ESS Container

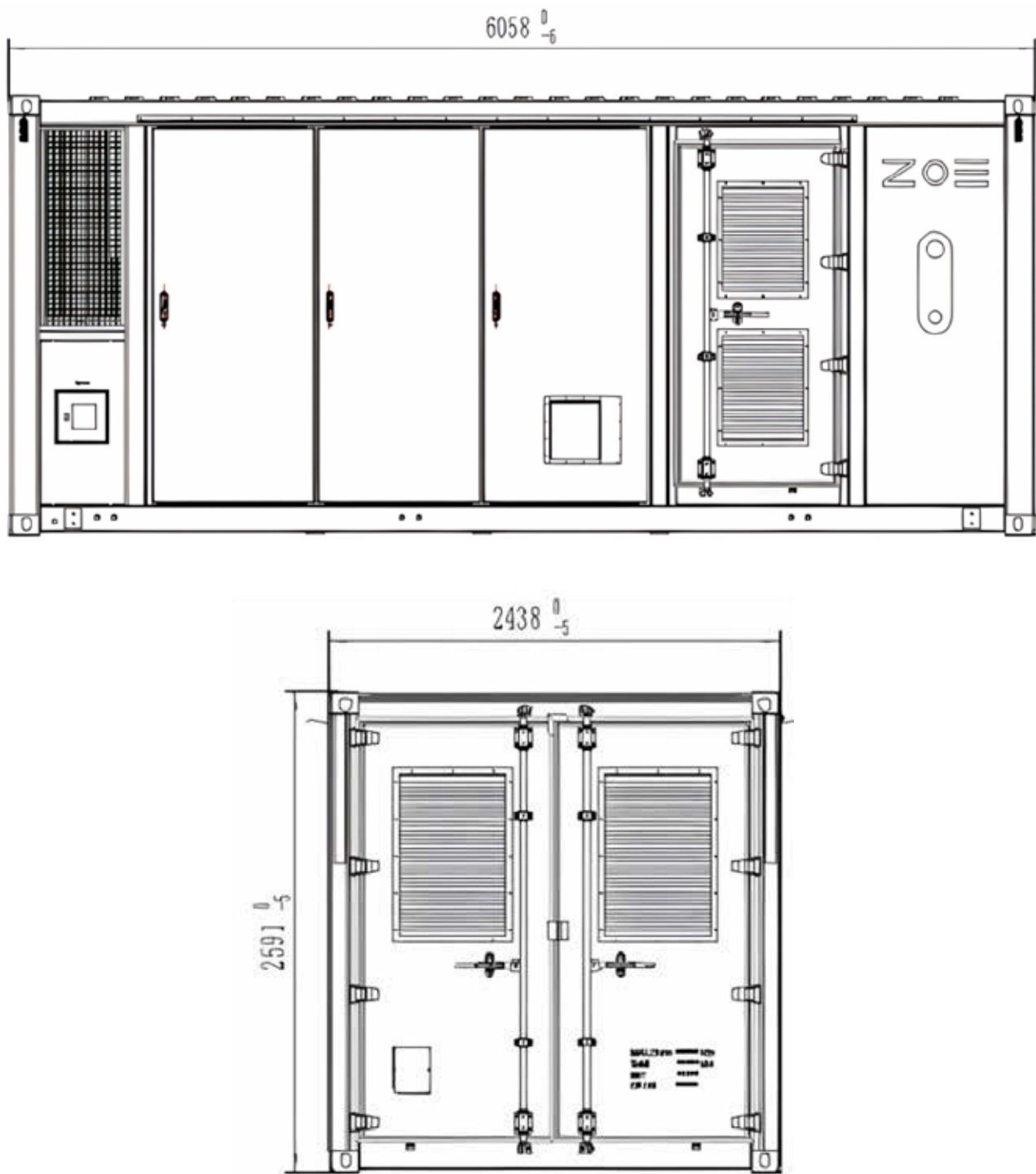


## P1300-1H

Product Model: P1313L1H-A-EUU

Please consult the User Manual for more information

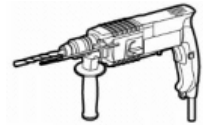
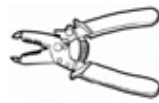
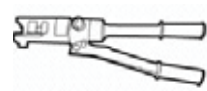
1. Product features



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

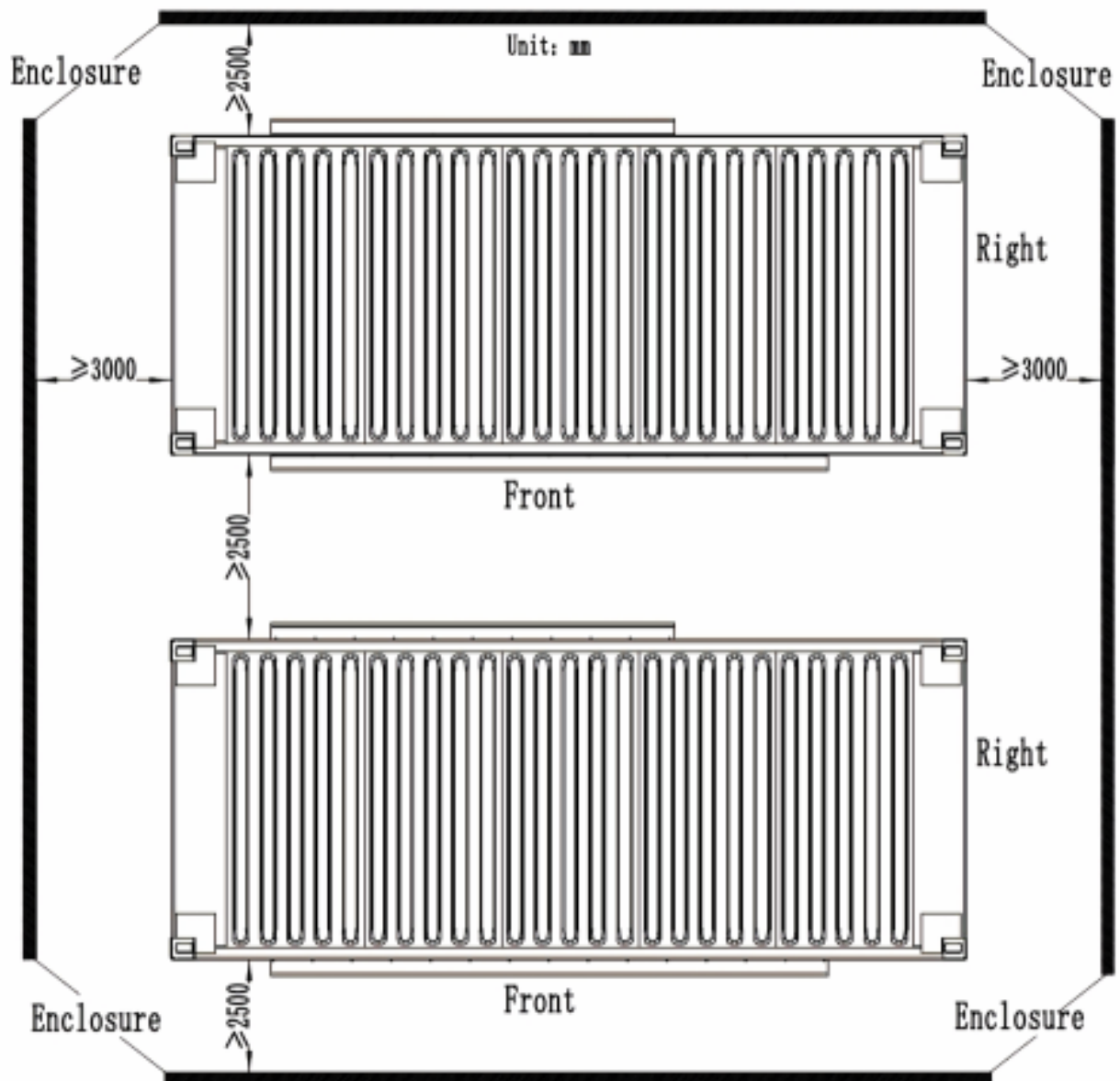
Figure 1-1 Dimensions

## 2. Tools

| SN | Name                                            | Purpose                                                                                | Picture                                                                               |
|----|-------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1  | Cordless drill + Drill bit $\Phi 16$            | 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 level-ing                                                                |    |
| 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.

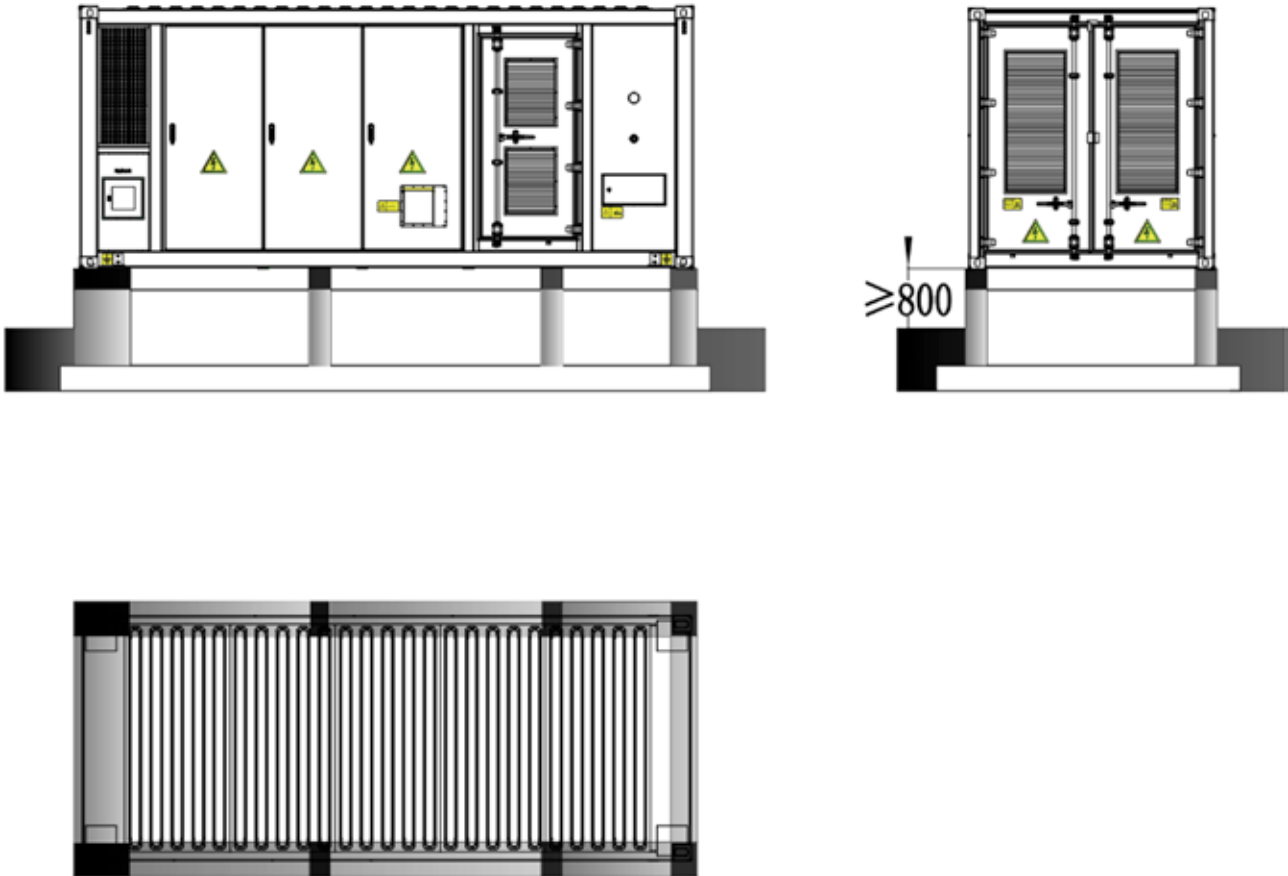
### 3. Requirement on installation space



**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

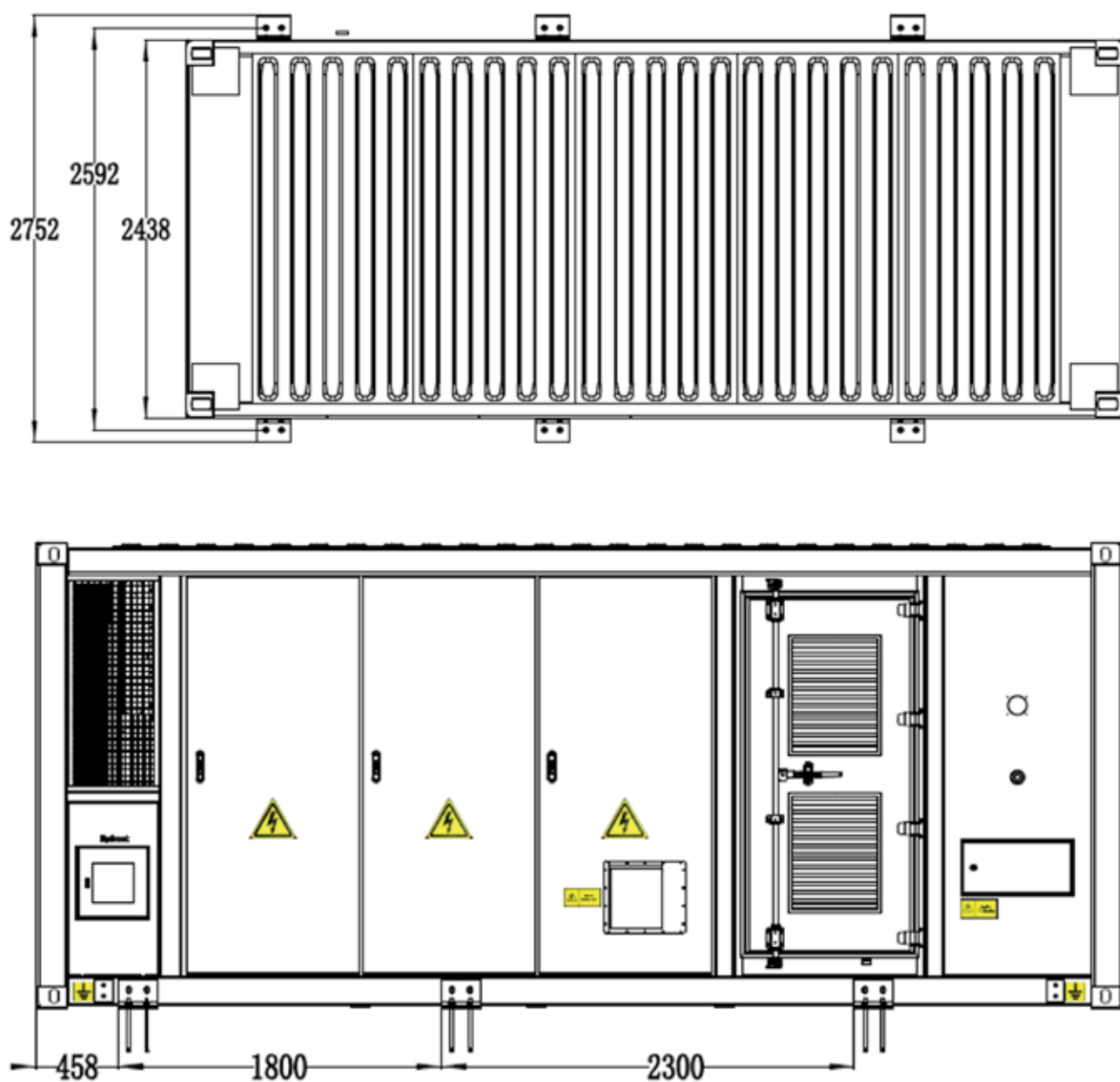
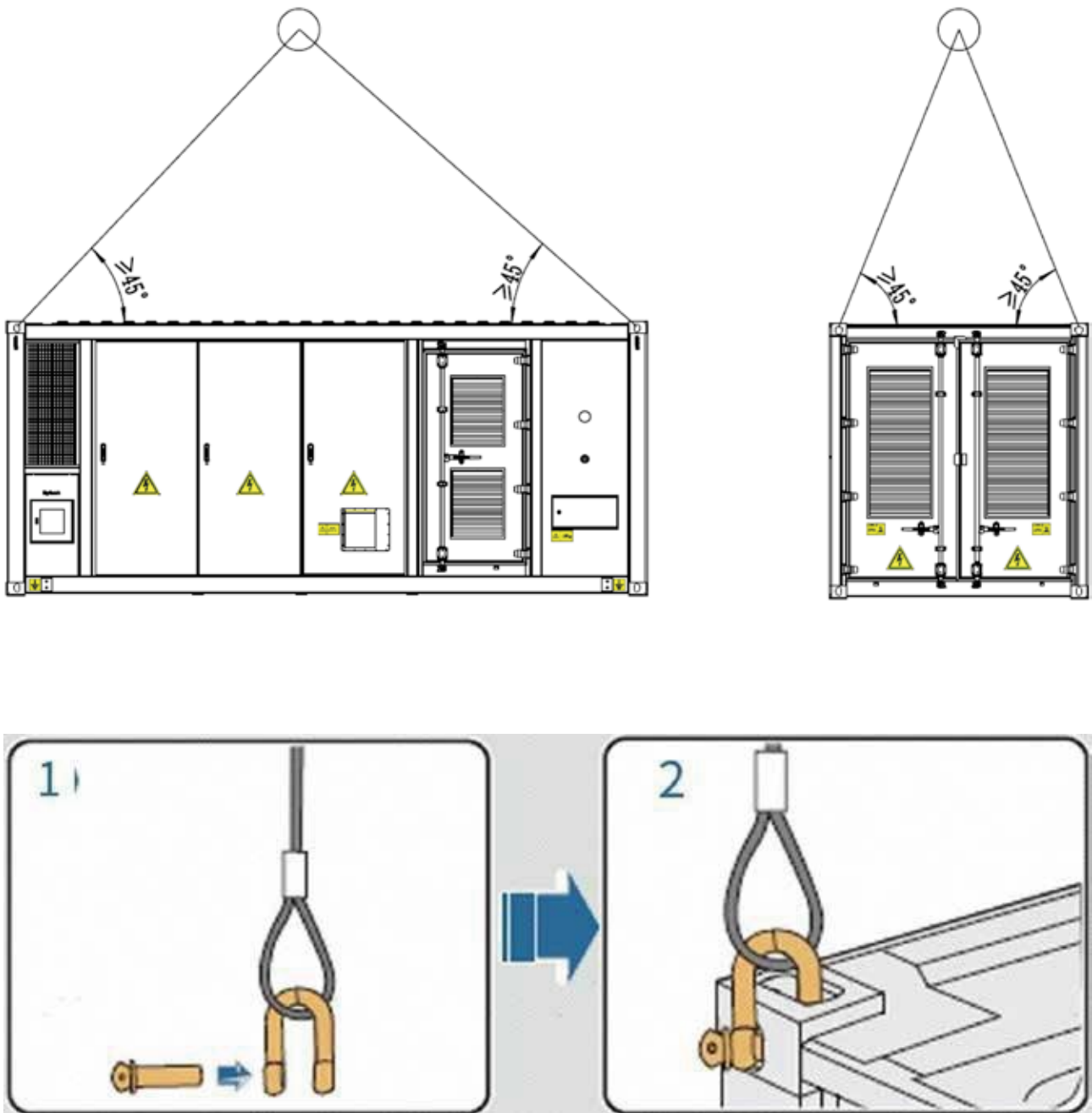


Fig. 4-2 Location plan of embedded screws

## 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.

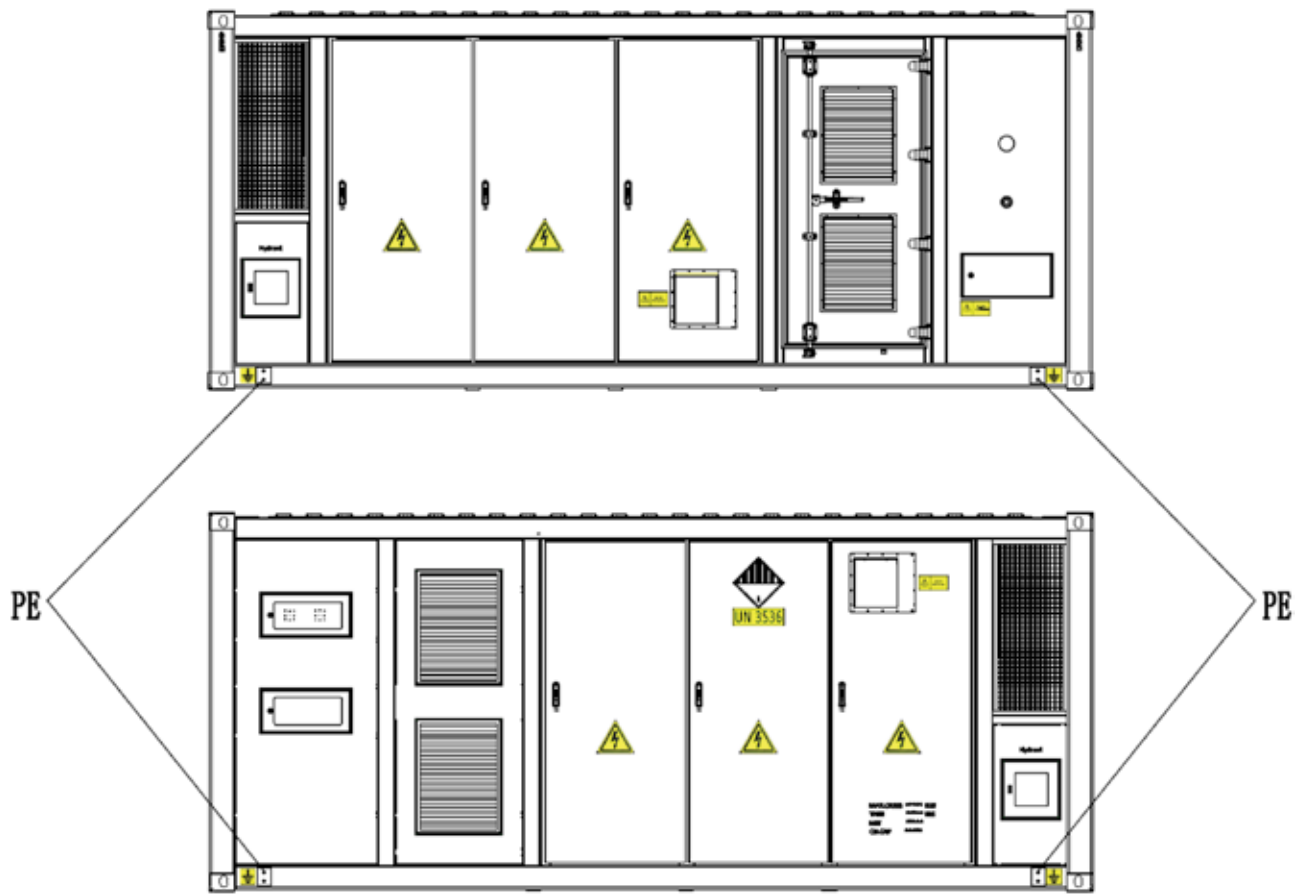


**Fig. 5-1 Lifting diagram**

- 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:  $\geq 25T$ ) and put it down gently.

## 6. Cable installation requirements

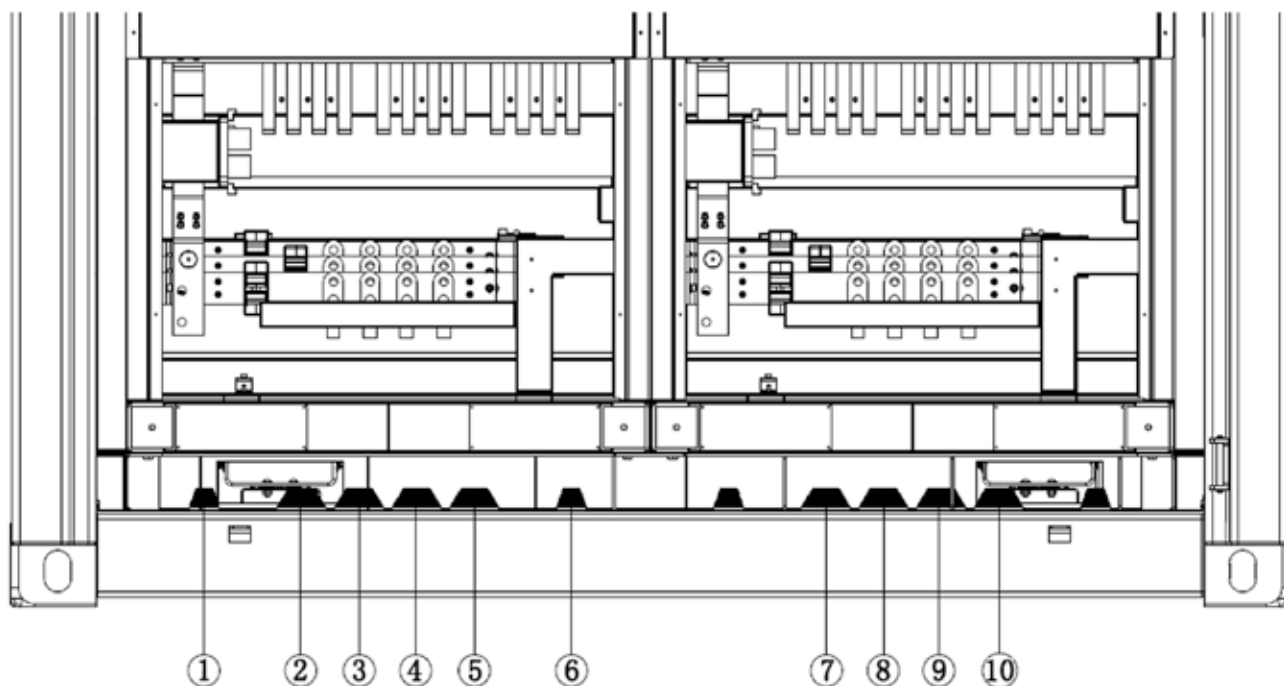
### 6.1 Grounding



**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

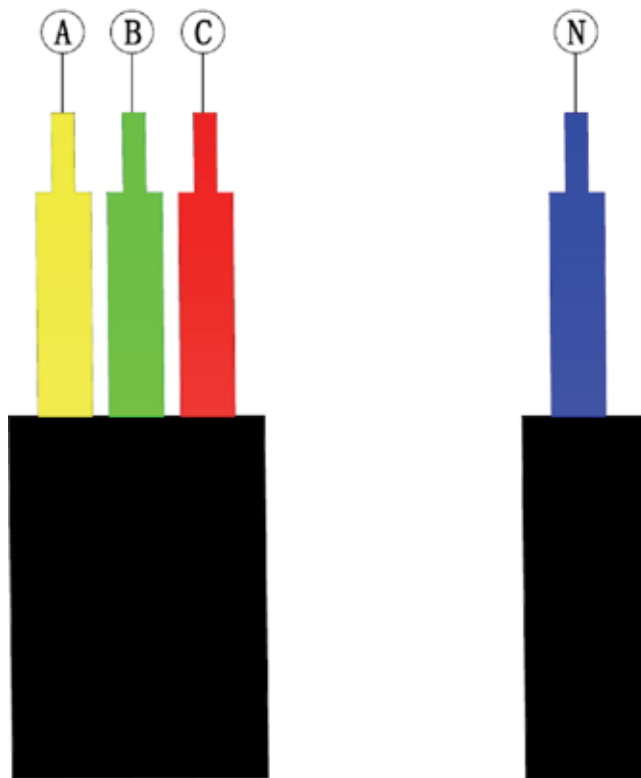
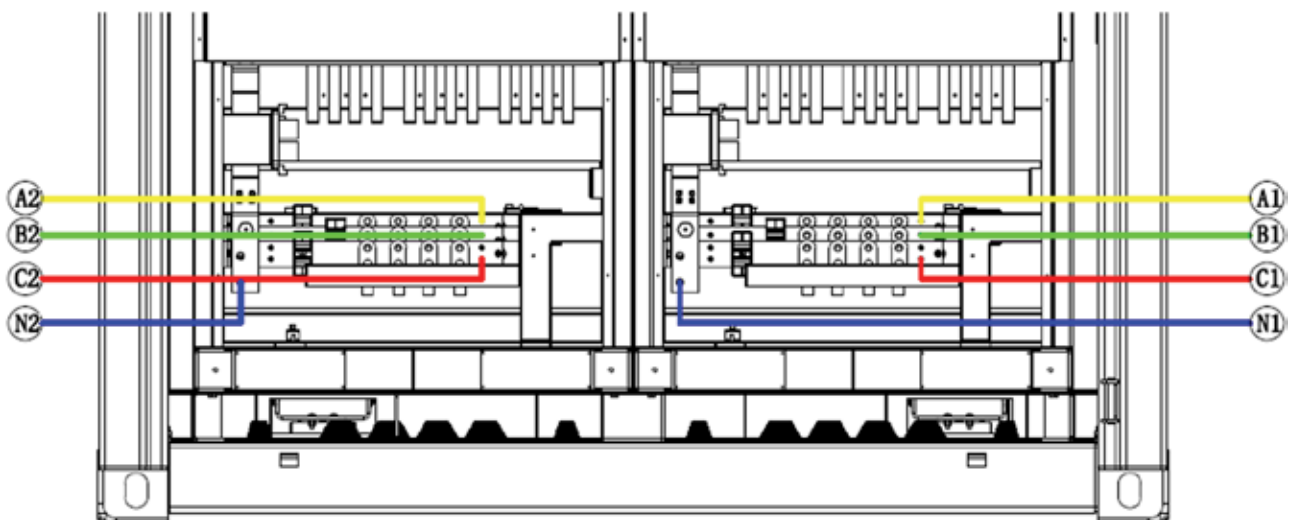


Fig. 6-3 Definition of 3-core cable    Definition of 1-core cable

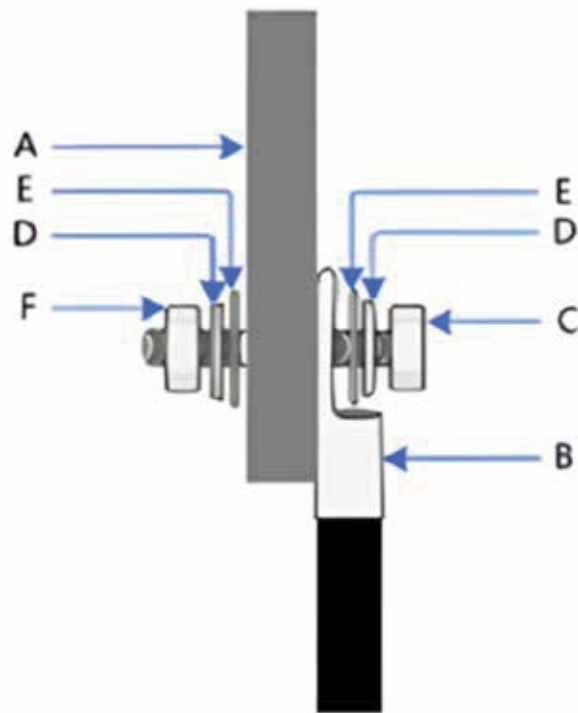
### 6.3 Definition of grid port



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

**Table 2 Definition of wiring for grid port**

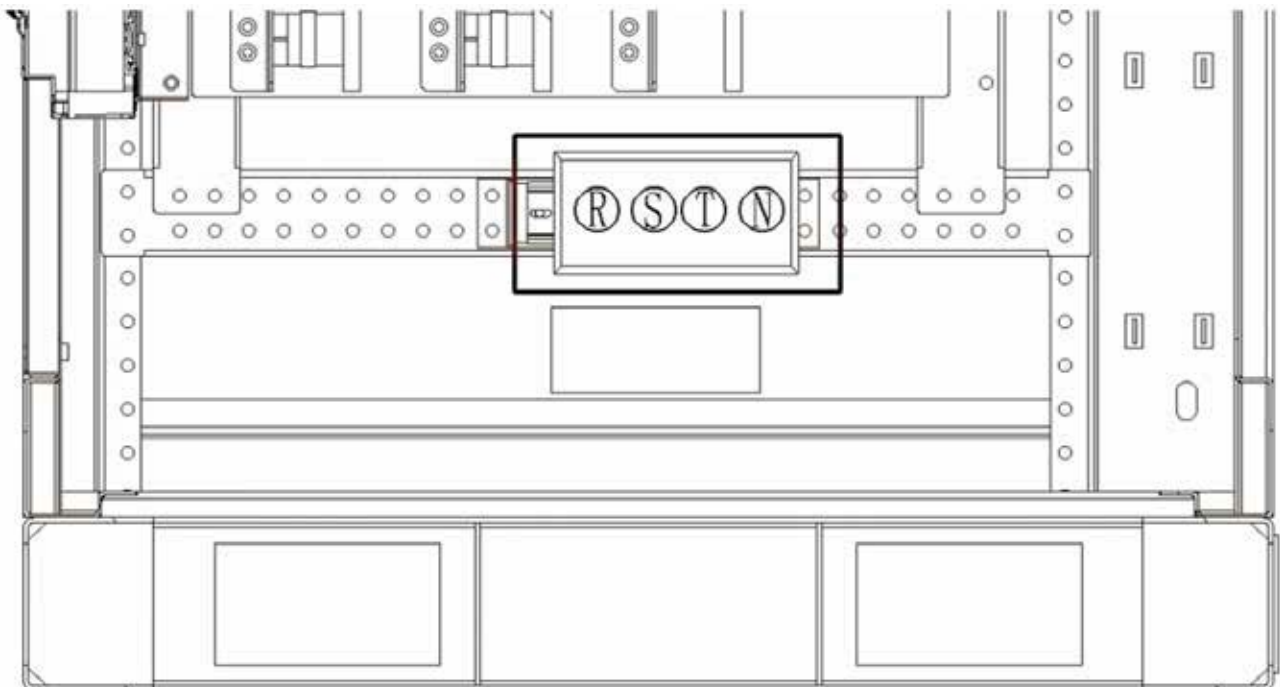
- Cable runs from the bottom of the container through the tower-shaped bushing (Fig. 6-2, ports No. 2, 3, 4, 5, 7, 8, 9 and 10) into the PCS cabinet
- The cable and busbar connection specifications are shown in the following diagram



| 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

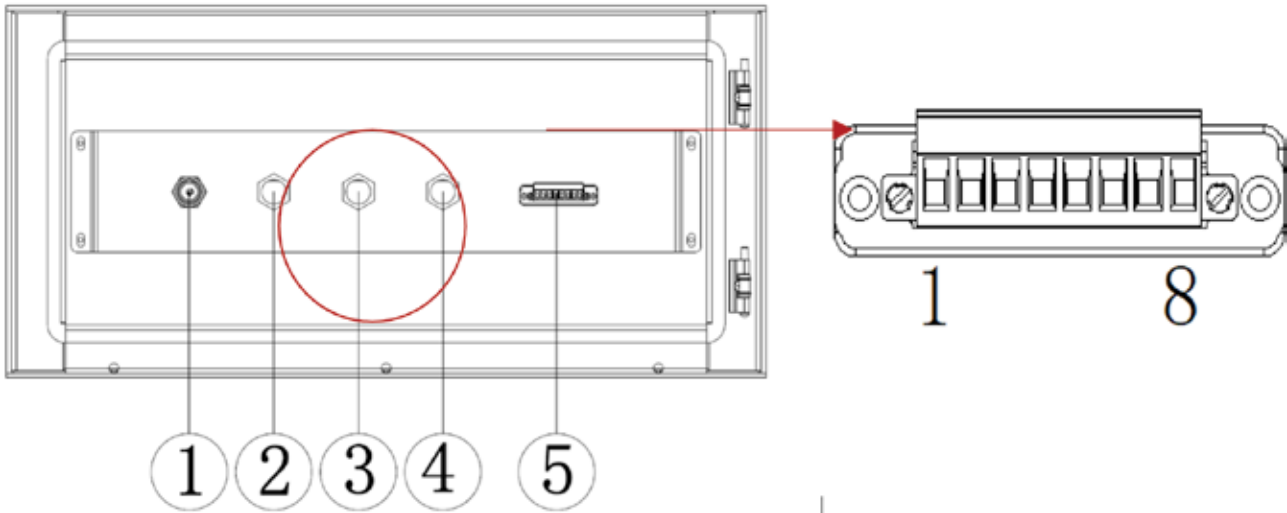


Fig. 6-7 Diagram of access point location for communication cable

| 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

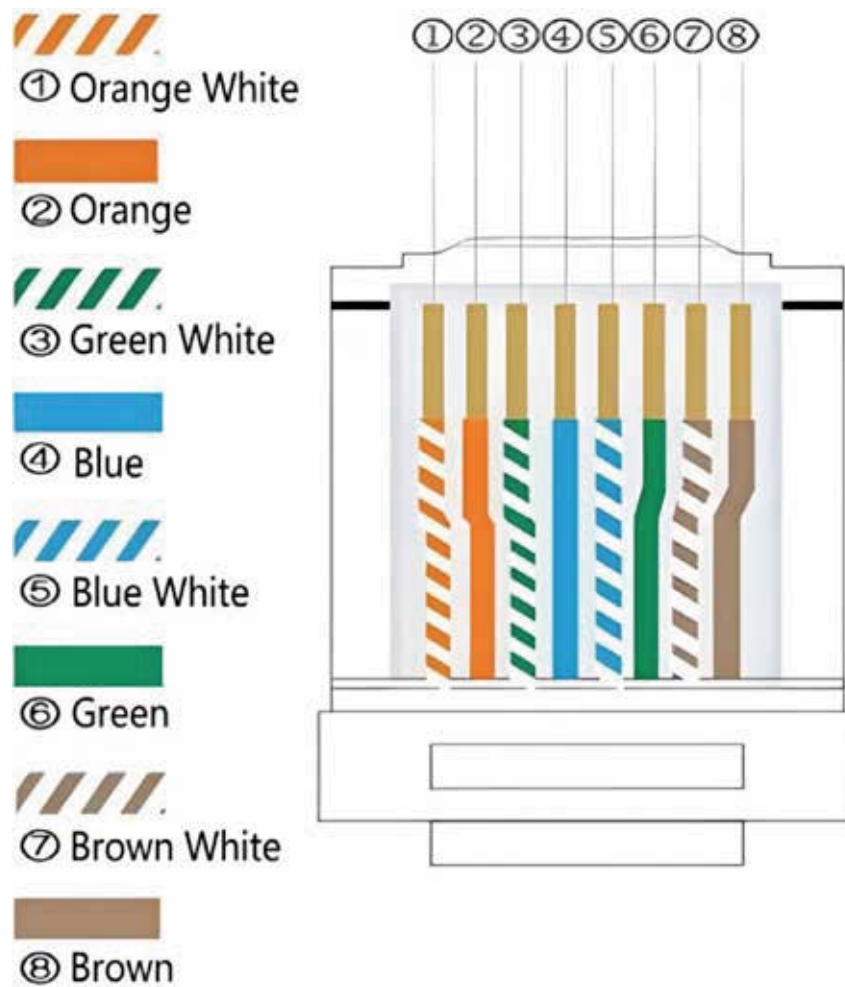


Fig. 6-8 Wiring diagram of 8-core network cable