

F01T100 (ETP4860)

Quick Installation Guide

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HUAWEI TECHNOLOGIES CO., LTD.





1 About This Document	1
2 Installation environment requirements	2
3 Precautions	3
4 Check Tools and Meters	4
5 Outline and Structure	5
6 Installing the Mounting Bracket(optional)	9
7 Installing the Cabinet on the Wall	10
7.1 Planning the Installation Position	10
7.2 Installing the Wall Mounting Fastening Parts	11
7.3 Fastening the Cabinet	13
8 Installing the Cabinet on a Pole	14
8.1 Planning the Installation Position	14
8.2 Installing the Pole Mounting Fastening Parts	15
8.3 Fastening the Cabinet	17
9 Installing the Cabinet on a Concrete Pedestal	18
9.1 Construct the Concrete Pedestal	18
9.2 Fastening the Cabinet	19
10 Installing the Cabinet on an Elevated Platform	22
10.1 Construct the elevated platform	22
10.2 Fastening the Cabinet	23
11 Routing Cables	24
11.1 Routing the PGND Cable	24
11.2 Routing the AC Power Cable	25
11.3 Routing Subscriber Cables	26
11.4 Connecting the RFT-V RPS Power Cable	27
11.5 Diagram of Cable Connections Between the RPS and MDF (RPS Power Supply)	30
11.6 Routing the Optical Cable or Optical Fiber	31
11.7 Routing the Optical Cable or Optical Fiber (Upstream)	32
11.8 Routing the Optical Cable or Optical Fiber (Downstream, Optical Configuration)	33
12 Installing the Electronic Door Lock System	34
12.1 Installing the Door Lock (BOM: 02311EYT)	34
12.2 Installing the Anti-Theft Screw	36
12.3 Post-installation Check	38
13 Installing Batteries	39
13.1 Installation Requirements	39
13.2 Pre-installation Check	40
13.3 Connecting Batteries	41
14 Installing Lithium Batteries	43
14.1 Installing Lithium Batteries (Configured with 20 Ah Batteries)	43
14.2 Connecting Lithium Battery Cables (Configured with 20 Ah Batteries)	44
14.3 Installing Lithium Batteries (Configured with 40 Ah Batteries)	45
14.4 Connecting Lithium Battery Cables (Configured with 40 Ah Batteries)	48



15	Checking the Cabinet Installation.....	51
16	Powering On the System (AC-powered device)	52
17	Powering On the System (DC-powered device + ETP4850 power system)	53
18	Powering On the System (DC-powered device + RPS power system)	54
19	Powering On the System (AC-powered device + Li-ion batteries)	55
20	Powering On the System (DC-powered device + ETP4860 power system + Li-ion batteries)	56
21	Sealing the Cabinet.....	57
22	FAQs for Installation.....	58
23	FAQs for Installation	59
	Appendix A Preprocessing the External Subscriber Cables.....	60

1 About This






Intended Audience

This topic describes how to install the F01T100 cabinet, including installing the cabinet, routing cables, and powering on the system.

The intended audience is hardware installation engineers.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

Change History

Changes between document issues are cumulative. Therefore, the latest document issue contains all updates made in previous issues.

Updates in Issue 01 (2019-09-30)

This is first release.



2 Installation environment requirements

Requirements for selecting the installation site

- Install the cabinet in a place free from high temperature, heavy dust, harmful gas, inflammable or explosive material, electromagnetic interference (such as a large radar station, launching tower, or transformer substation), unstable voltage, great shock (for example, near a railway).
- Ensure that the cabinet is installed at a place at least 500 meters away from the pollution source, highways, and the seashore. Do not install the cabinet at erosion-prone areas such as downwind direction of chemical plants, gas stations, foul ditches, fur factories.
- The installation site should be away from trees or other plants to reduce the possibility of air intake vent blockage and ensure normal operation of the equipment.
- If the installation site is prone to snow accumulation, you are advised to increase the installation foundation height to prevent the cabinet door from being blocked by snow.
- If the installation site is prone to snow accumulation, you are advised to increase the installation foundation height to prevent water from entering the cabinet.
- To prevent the cabinet noise from affecting residents, it is recommended that the distance between the installation site and households be greater than 10 m.
- Select a suitable place for the cabinet according to the telecom network plan and telecom device requirements considering the hydrology, geology, earthquake, electric power, and traffic conditions.

Environment

Requirements for the conditions outside the cabinet:

- Temperature: -33°C to $+50^{\circ}\text{C}$ or -33°C to $+45^{\circ}\text{C}$ with solar radiation
- Relative humidity : 8%–100%
- Temperature change rate: $\leq 0.5^{\circ}\text{C/minute}$
- Atmospheric pressure: 70–106 kPa
- Solar radiation: $\leq 1120\text{ W/m}^2$
- Wind speed: $\leq 45\text{ m/s}$



3 Precautions



NOTE

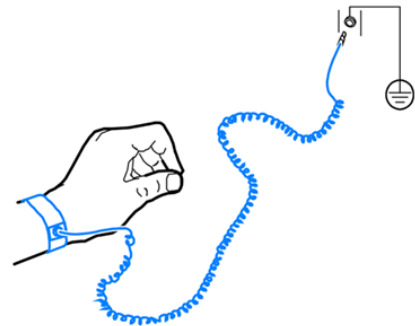
- This document aims to provide simple and distinctive guidelines for hardware installation.
- This document does not describe operations for the pre-delivery installation of the internal cables and so on. Instead, this document describes only the operations for on-site installation.

Electrostatic Discharge

Before touching the device, or holding the boards and IC chips, wear the ESD gloves or the ESD wrist strap to prevent the electrostatic discharge of the human body from damaging the sensitive components. Ensure that the other end of the ESD wrist strap is properly grounded.



ESD gloves



ESD wrist strap

Bundling cables

- The distance between cable ties or binding straps inside the cabinet must be within 250 mm. (For user cable, the distance must be within 200 mm.)
- Use diagonal pliers to cut off the extra part of the cable tie to the end, and ensure that the cable tie is neat without sharp edges to prevent hand injury.

Affixing labels / tags

- After routing the cable, attach the label or fasten the tag to the cable 20 mm away from the connector.
- After the label for the signal cable is attached to the signal cable, the rectangular text area of the label must face rightwards or downwards.
- After the identification plate for the power cable is attached to the power cable, the text area of the plate must face rightwards or upwards. Ensure that the side attached with the label faces outwards.





















Using the desiccant

After removing the packing case of the cabinet on the site, take out the desiccant packages from the corresponding paper bag (Note: Do not tear the own packages of the desiccant). Then, put the desiccant packages at proper places of the cabinet. After powering on the cabinet, the desiccant packages must be removed and disposed of as an industrial waste.



4 Tools and Meters

Before you begin, get the following tools ready.

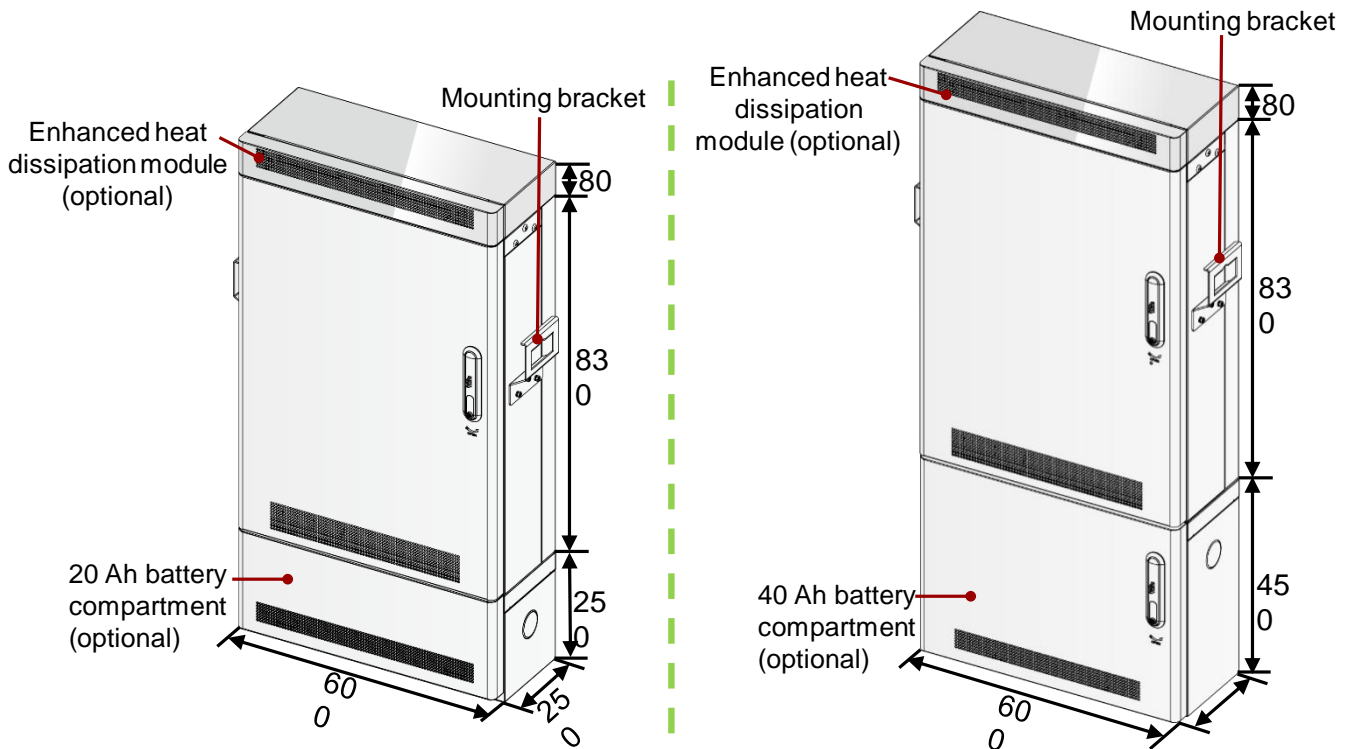
 <p>Marker pen</p>	 <p>Flat-head screwdriver</p>	 <p>Phillips screwdriver</p>	 <p>Diagonal pliers</p>
 <p>Adjustable wrench</p>	 <p>Socket wrench</p>	 <p>Measuring tape</p>	 <p>Claw hammer</p>
 <p>Percussion drill</p>	 <p>Wire cutter</p>	 <p>Hydraulic crimper</p>	 <p>Cable cutter</p>
 <p>Network cable crimping pliers</p>	 <p>ESD gloves</p>	 <p>Multimeter</p>	 <p>ESD wrist strap</p>
 <p>Network cable tester</p>	 <p>Optical power meter</p>	 <p>Socket ring wrench</p>	 <p>Bit</p>



5 Outline and Structure

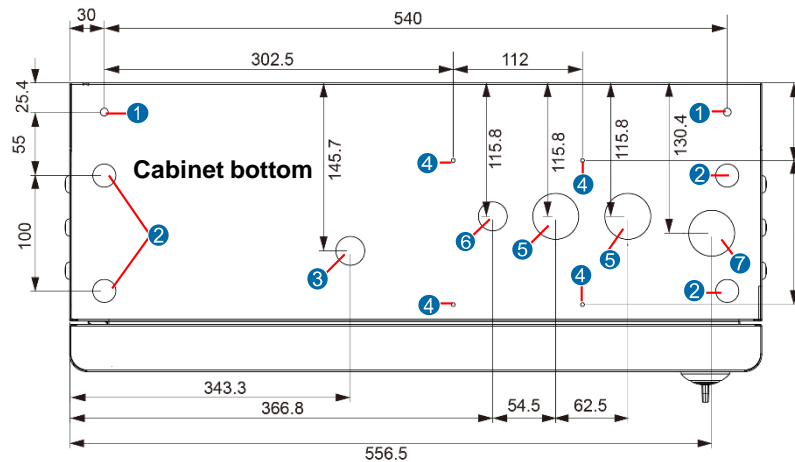
F01T100 cabinet (appearance and dimensions)

Unit: mm

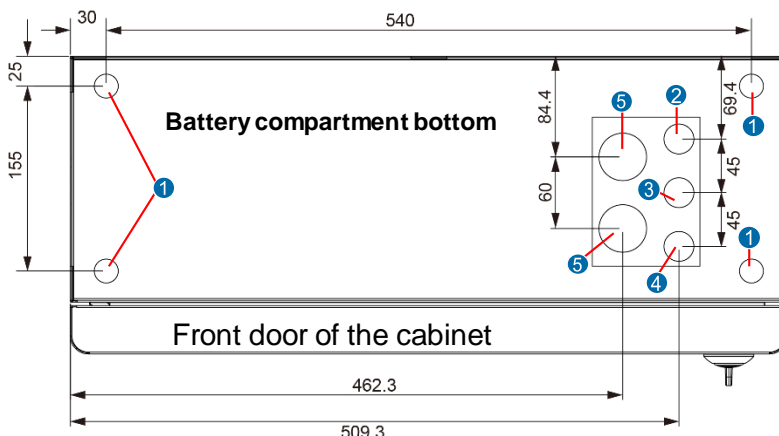


Dimensions of installation interfaces

Top view



Front door side of the cabinet



Front door side of the cabinet

Unit: mm

- ① Installation screw holes for the battery compartment 2 x M8
- ② Cabinet installation hole 4 x Ø15
- ③ Cable hole of AC power cable Ø33
- ④ Installation hole for the battery compartment 4 x M4
- ⑤ Cable hole for subscriber cable 2 x Ø48
- ⑥ Cable hole for PGND cable Ø33
- ⑦ Cable hole for optical cable Ø48

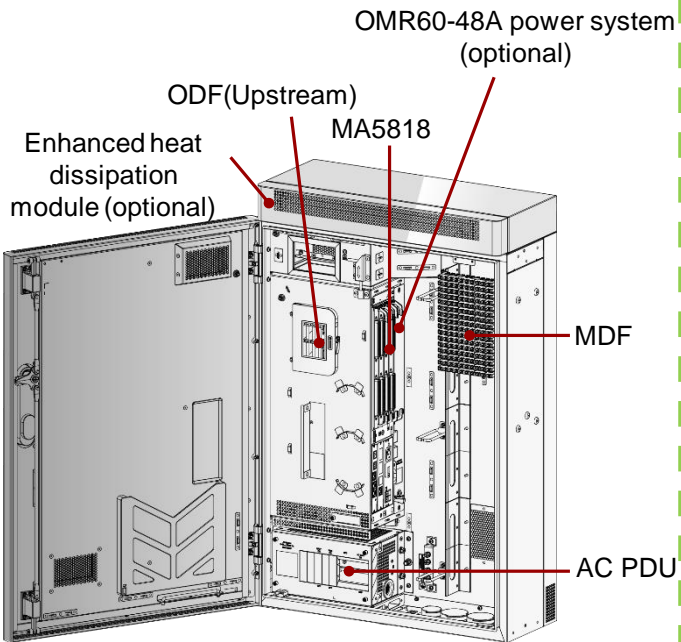
- ① Cabinet installation hole 4 x Ø15
- ② Cable hole for PGND cable Ø33
- ③ Cable hole for optical cable Ø33
- ④ Cable hole of AC power cable Ø33
- ⑤ Cable hole for subscriber cable 2 x Ø48



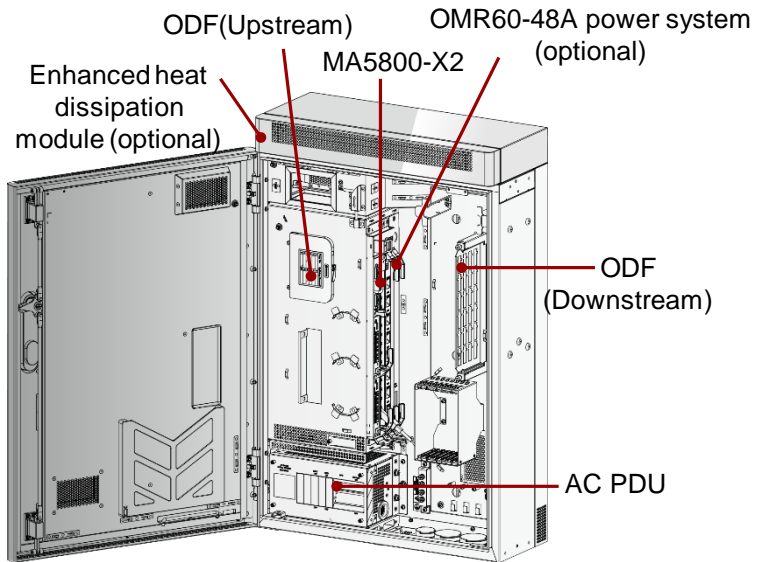
5 Outline and Structure

AC main device

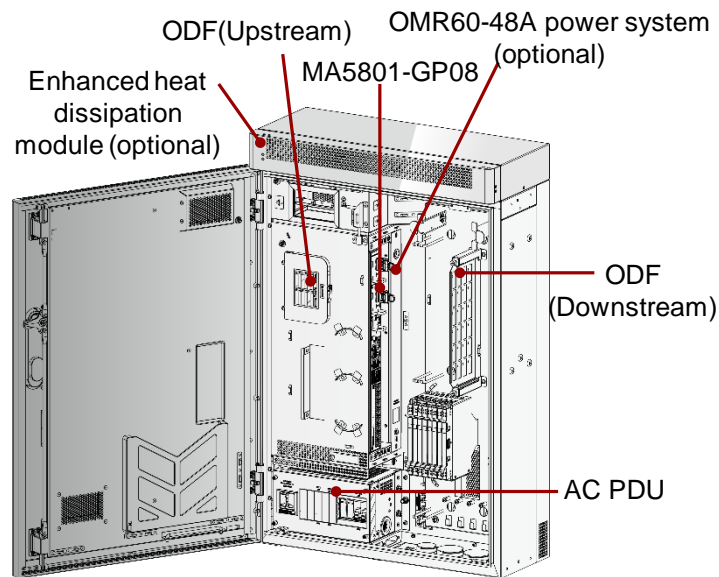
Copper access(MA5818)



Fiber access(MA5800-X2)



Fiber access(MA5801-GP08)

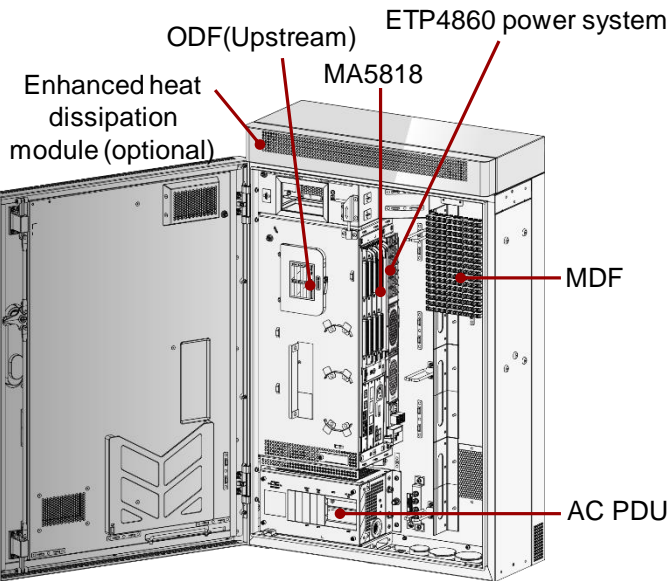




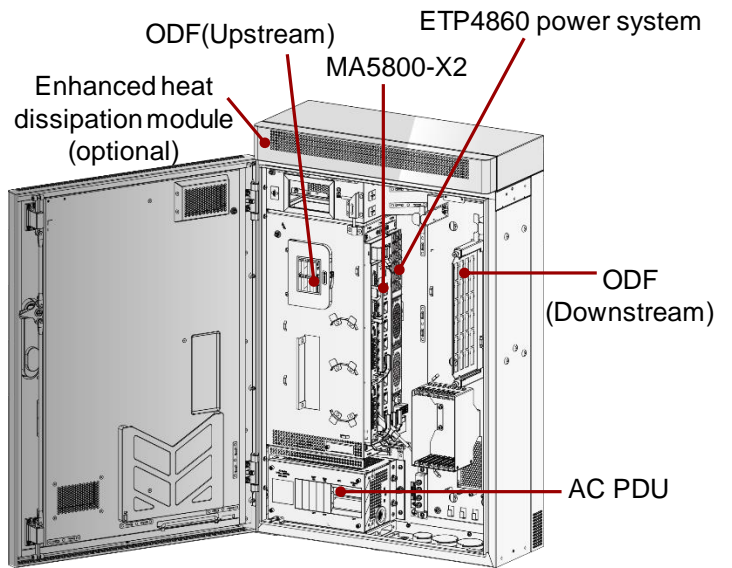
5 Outline and Structure

DC main device+ETP4860 power system

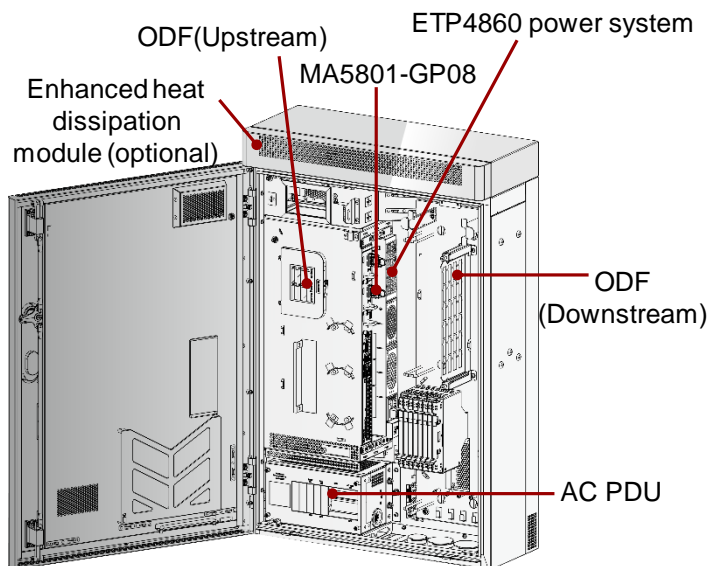
Copper access(MA5818)



Fiber access(MA5800-X2)



Fiber access(MA5801-GP08)

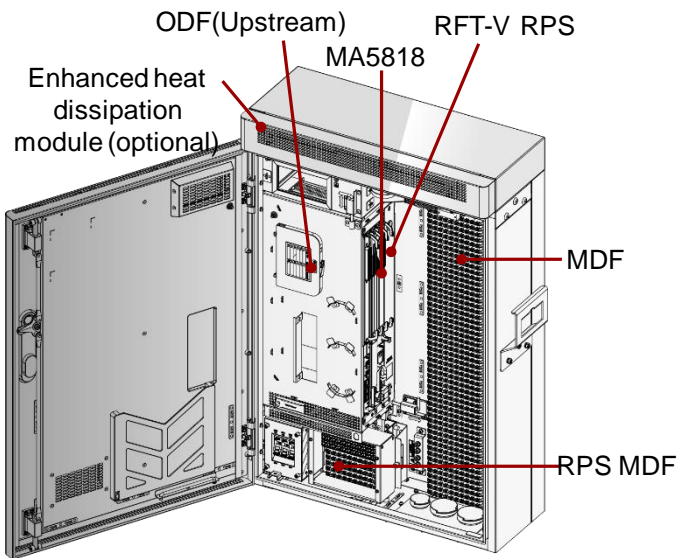




5 Outline and Structure

DC main device+ Remote power system

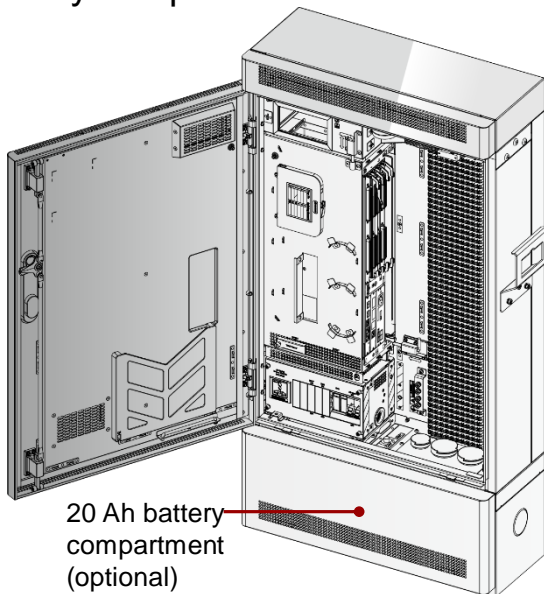
Copper access



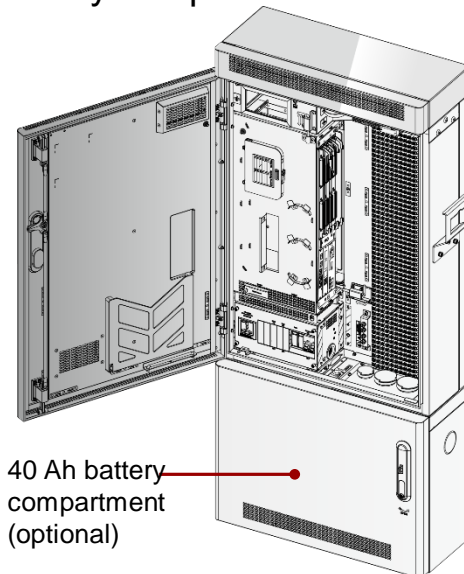
NOTE

- The cabinet can be configured with the 20 Ah battery compartment or the 40 Ah battery compartment. The copper configuration of the AC MA5818 is used as an example for both models.
- In the case of remote power supply, the cabinet is not configured with a battery compartment.
- When the AC main equipment MA5801-GP08 is configured, the cabinet is not configured with a battery compartment.

Configured with 20 Ah battery compartment



Configured with 40 Ah battery compartment





6 Installing the Mounting Bracket

NOTICE

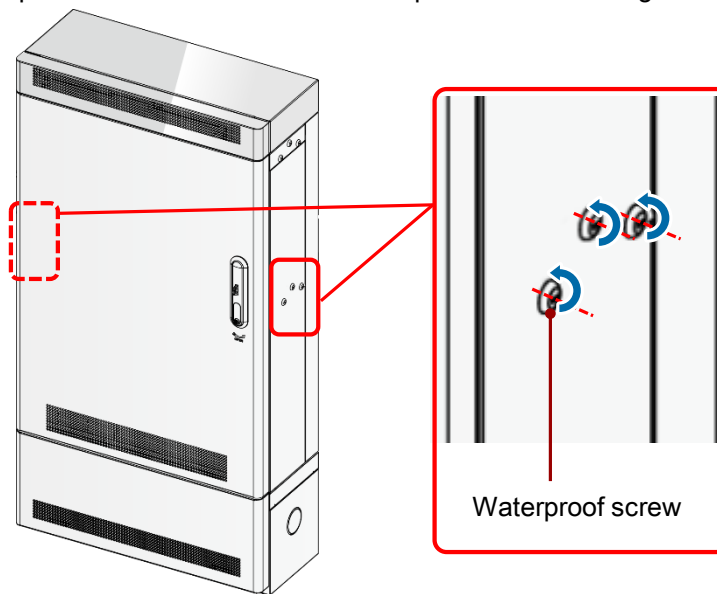
- The cabinet is configured with mounting ears. Before installing the cabinet, remove the waterproof screws and install the lifting eyes/mounting ears properly so as to carry the cabinet.
- After installing the cabinet, remove the lifting eyes/mounting ears and install the waterproof screws.



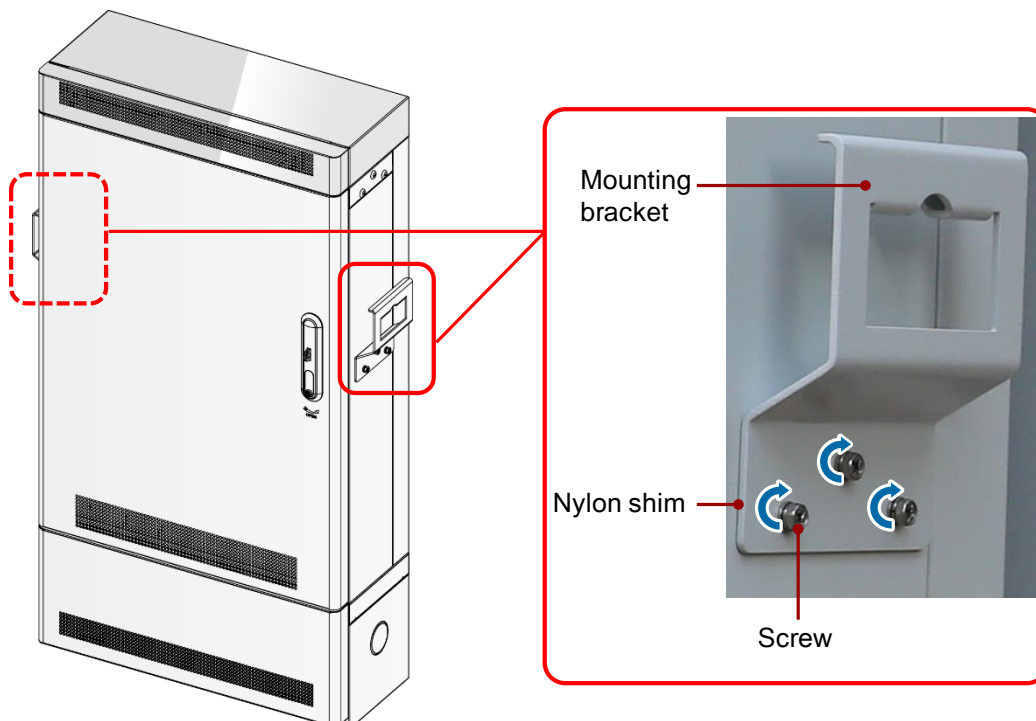
NOTE

- The mounting ears for 40 Ah and 20 Ah batteries are installed in the same way. This section uses the 20 Ah batteries as an example.
- Reserved holes on the top of the cabinet are used to install mounting ears. Holes are reserved in the middle of the cabinet. After the mounting ears are moved downwards, the mounting ears can be used as handles to facilitate transfer. This section uses the installation in the middle of the cabinet as an example.

- 1 Unfasten the waterproof screws from the installation position of mounting brackets.



- 2 Use the screws to fasten the nylon shims and mounting brackets.





7 Installing the cabinet on the Wall

7.1 Planning the Installation Position

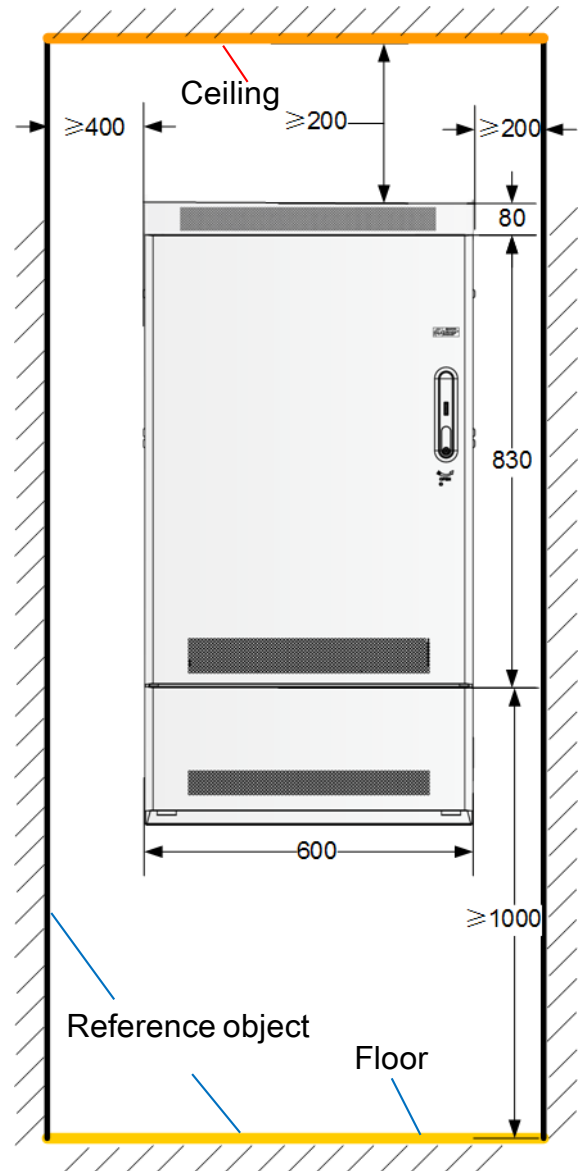
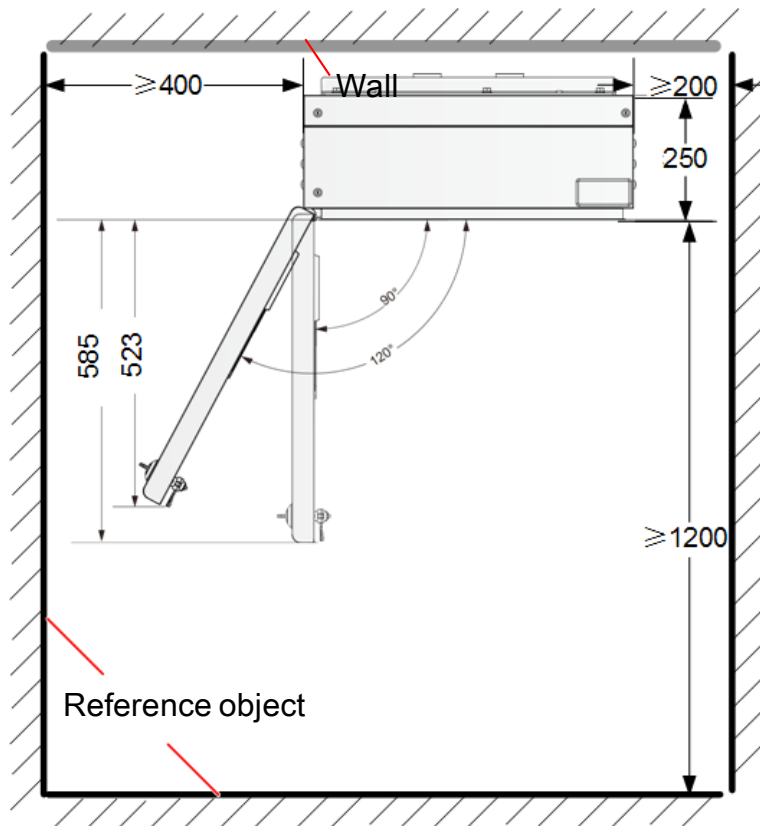
NOTE

- Enhanced heat dissipation module and the battery compartment are optional, when they are not configured, you can prepare the dimensions on the actual condition.
- Ensure that at least one person holds the cabinet during installation or turnover.
- The cabinet can be configured with the 20 Ah or 40 Ah battery compartment. The installation methods are the same.

Unit: mm

Top view

Frontview





7 Installing the cabinet on the Wall

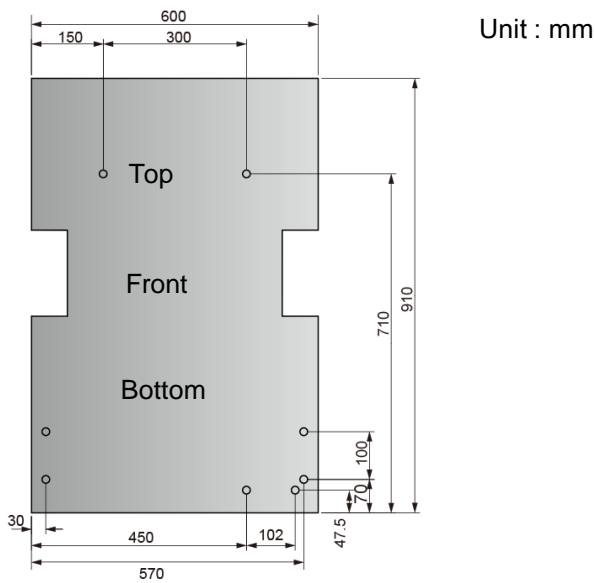
7.2 Installing the Wall Mounting Fastening Parts

NOTICE

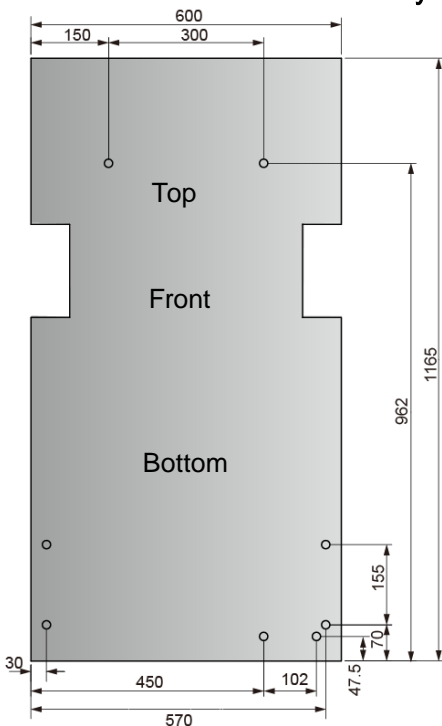
- Hold the drill tight and keep the bit vertical to the wall. To avoid sloping holes, do not shake while drilling.
- When the cabinet is fully configured (including the batteries), its weight can reach 156 kg. Therefore, consider the weight-bearing capability of the wall when installing the cabinet. The cabinet can be installed only when the wall is able to support the cabinet.
- Ensure that sufficient heat dissipation space (50 mm) is reserved between the rear panel of the cabinet and the wall if the cabinet is mounted on a wall.

1 Place the marking-off plate on the wall and mark installation holes by the marker pen.

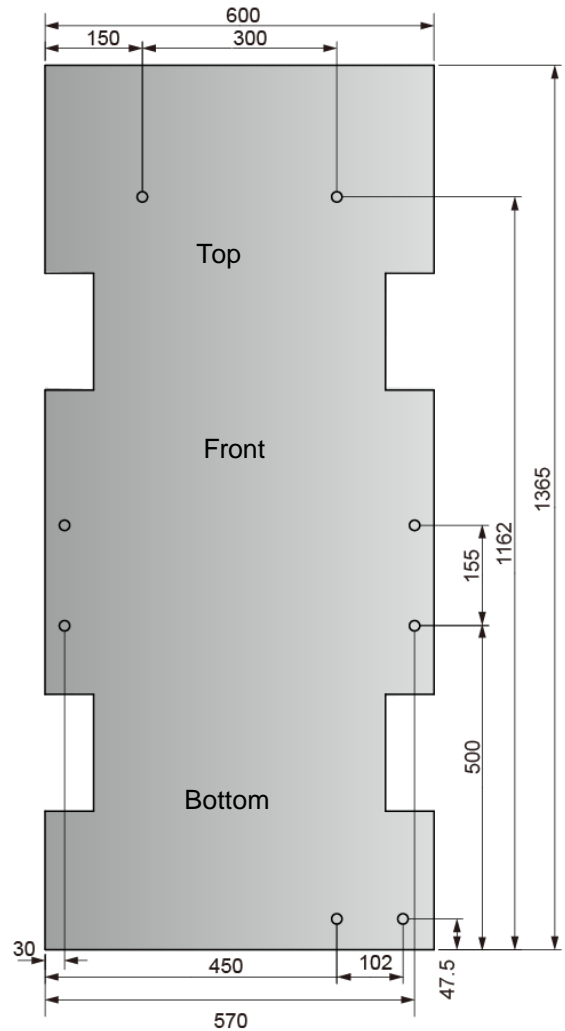
When the cabinet without the battery compartment.



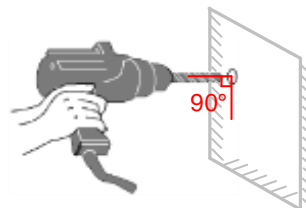
When the cabinet with the 20 Ah battery compartment.



When the cabinet with the 40 Ah battery compartment.



2 Drill holes (with the Ø16 bit).

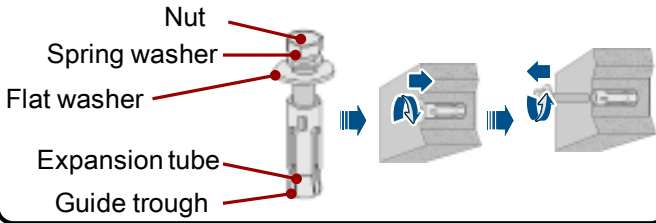


The depth of the hole should range from 52 mm to 60 mm.



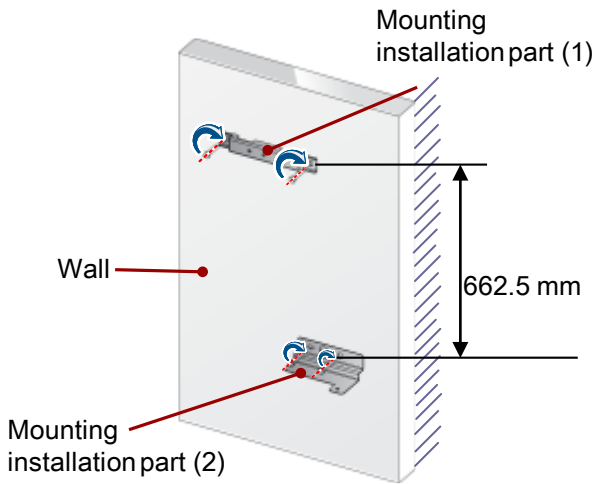
7 Installing the cabinet on the Wall

3 Install the M12 expansion bolts.

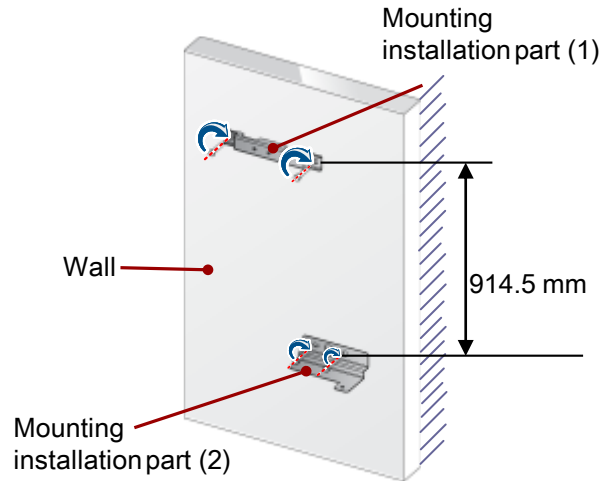


4 Install the wall mounting fastening parts.

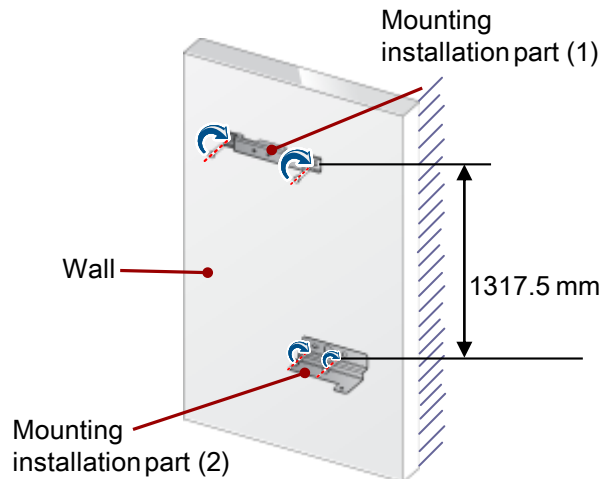
When the cabinet without the battery compartment.



When the cabinet with the 20 Ah battery compartment.



When the cabinet with the 40 Ah battery compartment.



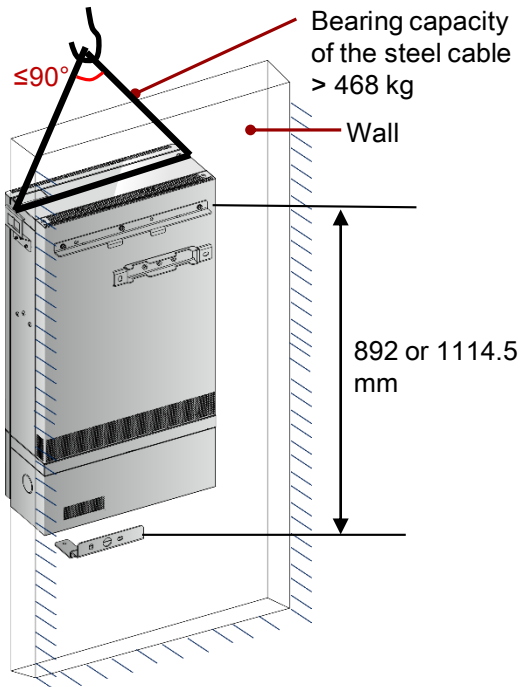


7 Installing the cabinet on the Wall

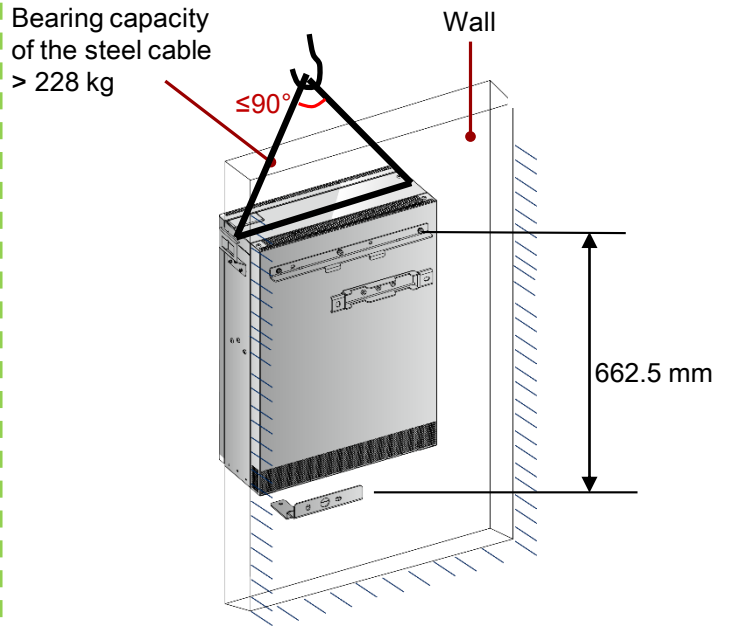
7.3 Fastening the Cabinet

1 Use the steel cable to carry the cabinet onto the mounting fastening part.

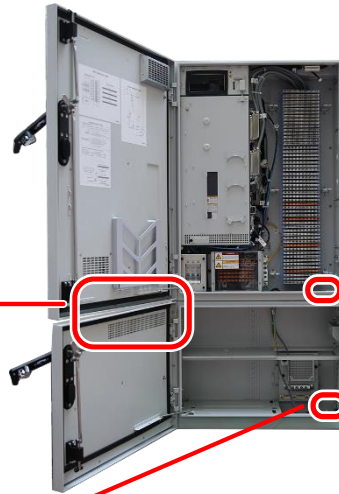
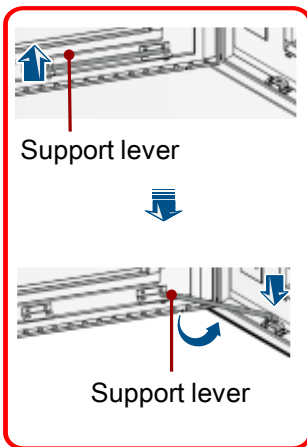
When the cabinet with the battery compartment.



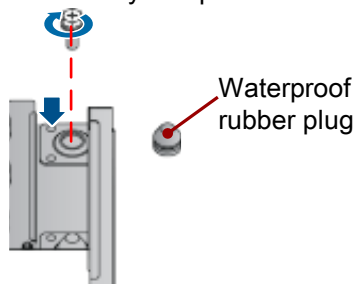
When the cabinet without the battery compartment.



2 Open and fasten the door, unfasten the waterproof rubber plug at the bottom of the cabinet, and then use a M8 × 25 screw to fasten the cabinet.



When the cabinet with the battery compartment.



When the cabinet without the battery compartment.





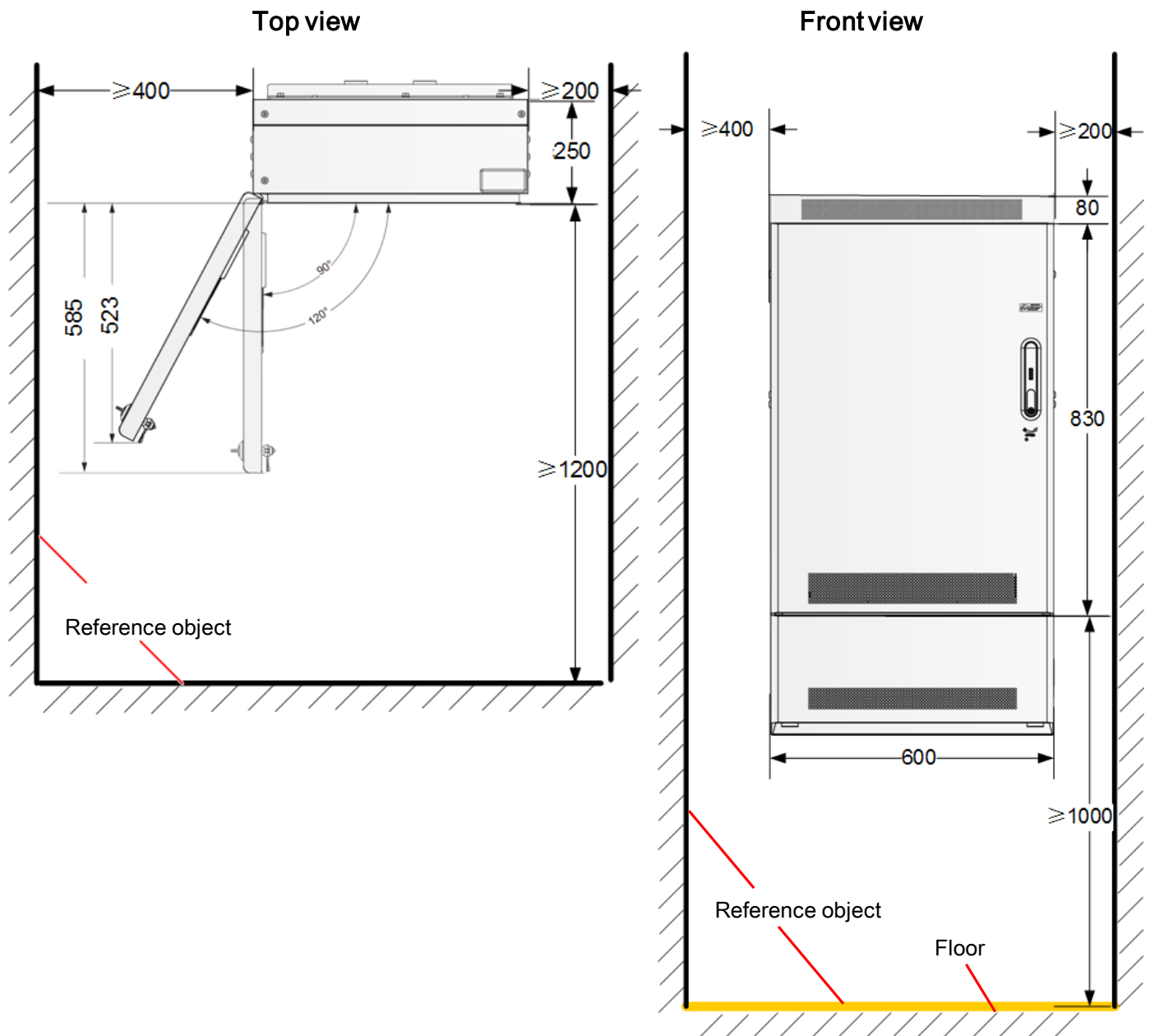
8 Installing the cabinet on a Pole

8.1 Planning the Installation Position

NOTE

- Enhanced heat dissipation module and the battery compartment are optional, when they are not configured, you can prepare the dimensions on the actual condition.
- Ensure that at least one person holds the cabinet during installation or turnover.
- The cabinet can be configured with the 20 Ah battery or 40 Ah battery compartment. The installation methods are the same.

Unit: mm





8 Installing the cabinet on a Pole

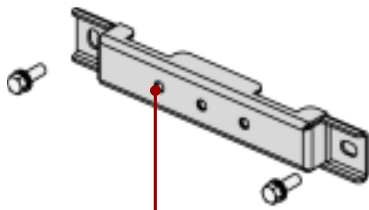
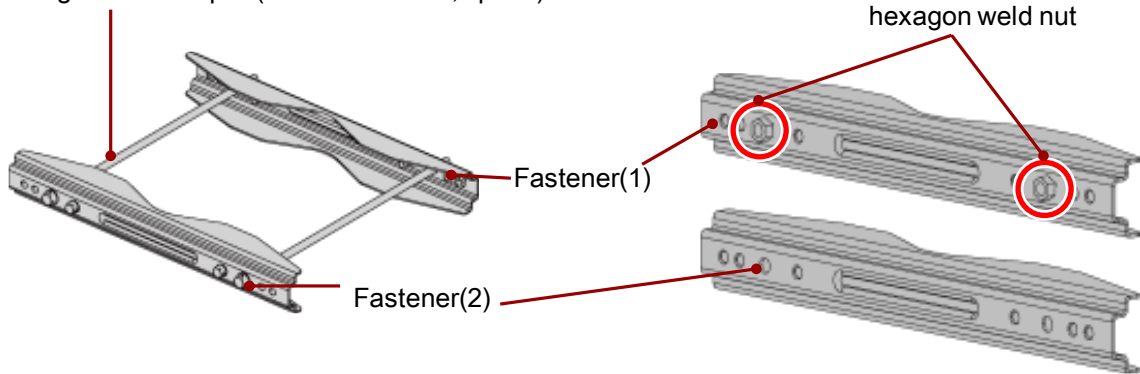
8.2 Installing the Pole Mounting Fastening Parts

NOTICE

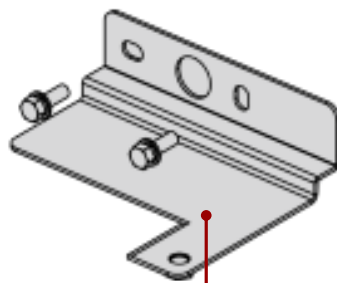
The diameter of the pole is required to be between 250 mm and 350 mm (When the cabinet is fully configured, its weight can reach 48 kg. Therefore, consider the weight-bearing capability of the pole when installing the cabinet. The cabinet can be installed only when the pole is able to support the cabinet.)

1 Install the fastener with four M10 x 30 screws.

Pole-mounting installation part(BOM:21150503;2 pairs)



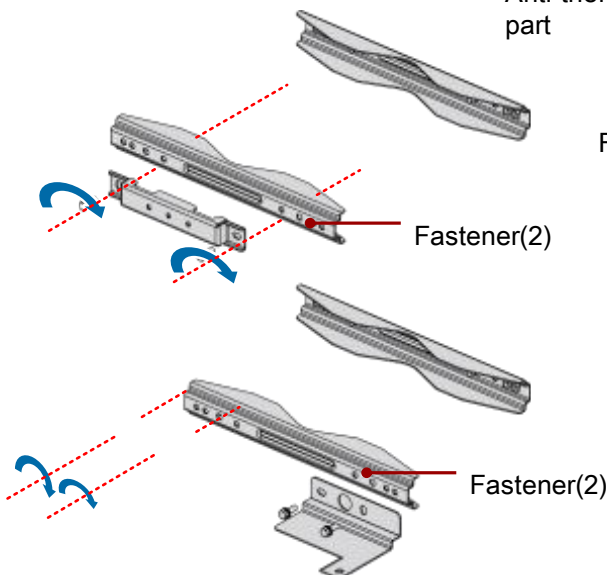
Wall-mounting installation part



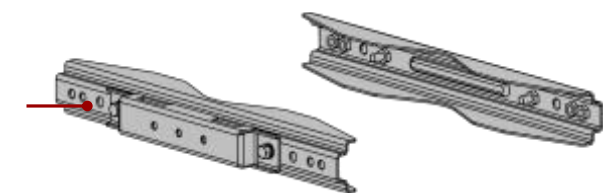
Anti-theft mechanical part

NOTICE

- Fastener(1) is different from fastener(2) in that fastener(1) has hexagon weld nuts on the front while fastener(2) does not.
- The anti-theft part and wall-mounting part need to be fixed on fastener(2).



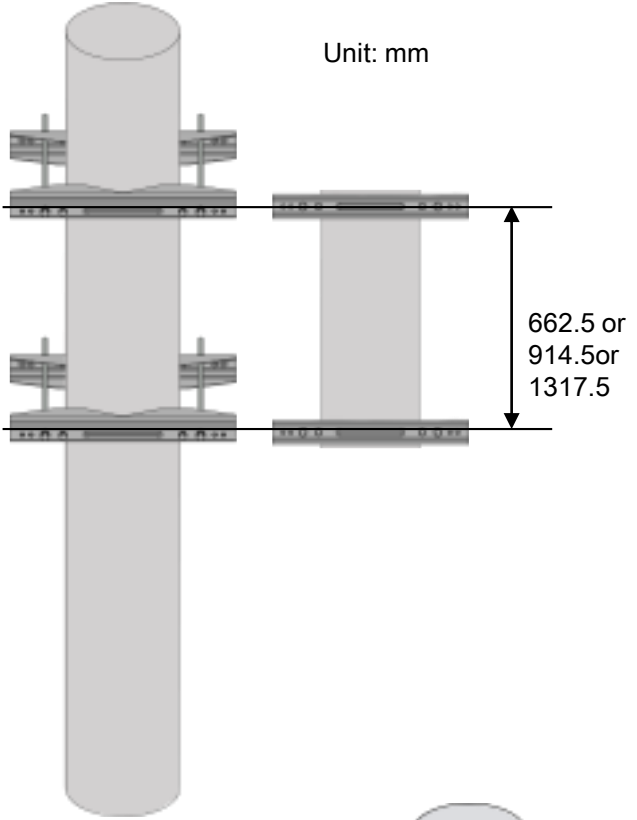
Fastener(2)



Fastener(2)



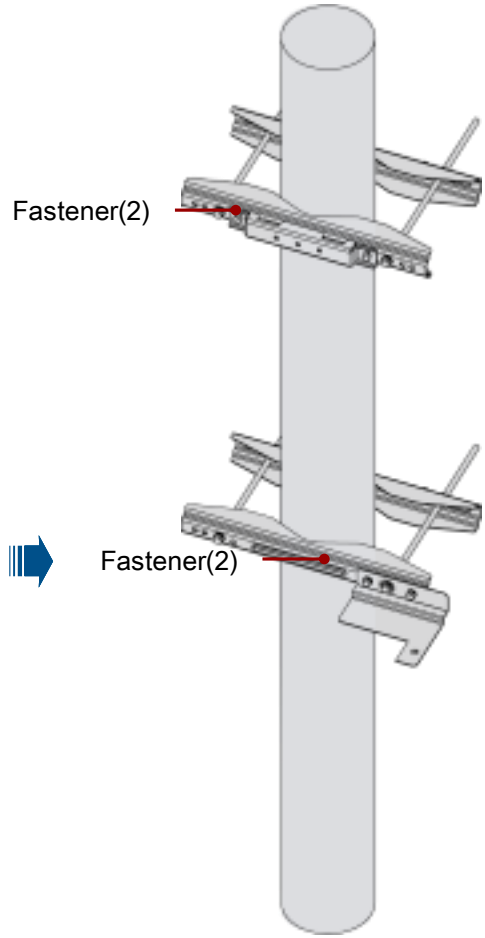
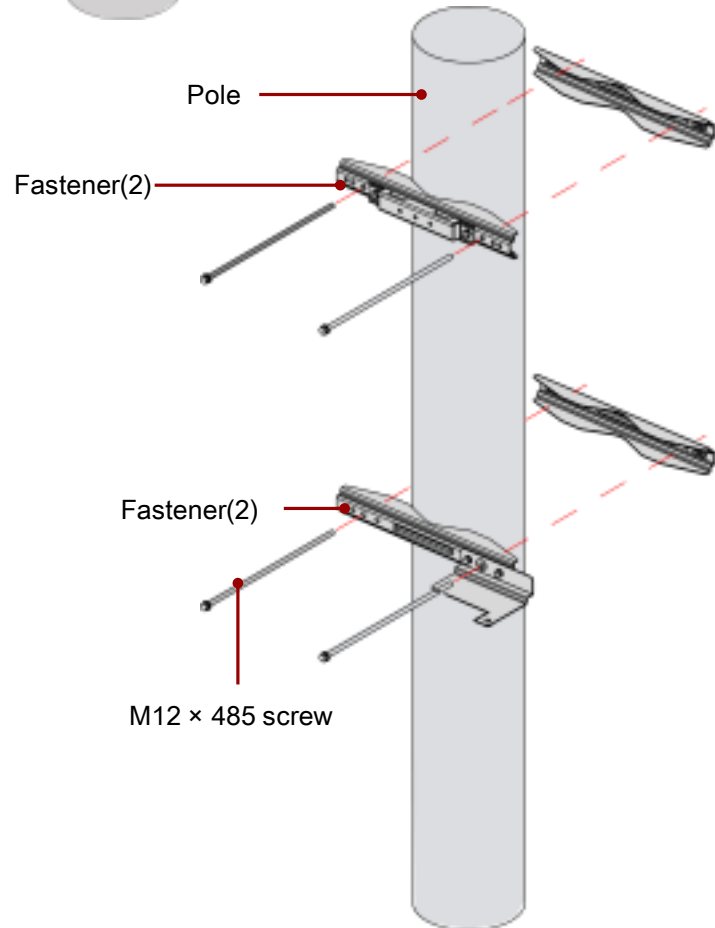
2 Confirm the installation position, and then, install the fasteners with four M12 × 485 screws.



When the cabinet without the battery compartment, the distance between the fastener is 662.5 mm.

When the cabinet with the 20 Ah battery compartment, the distance between the fastener is 914.5 mm.

When the cabinet with the 40 Ah battery compartment, the distance between the fastener is 1317.5 mm.

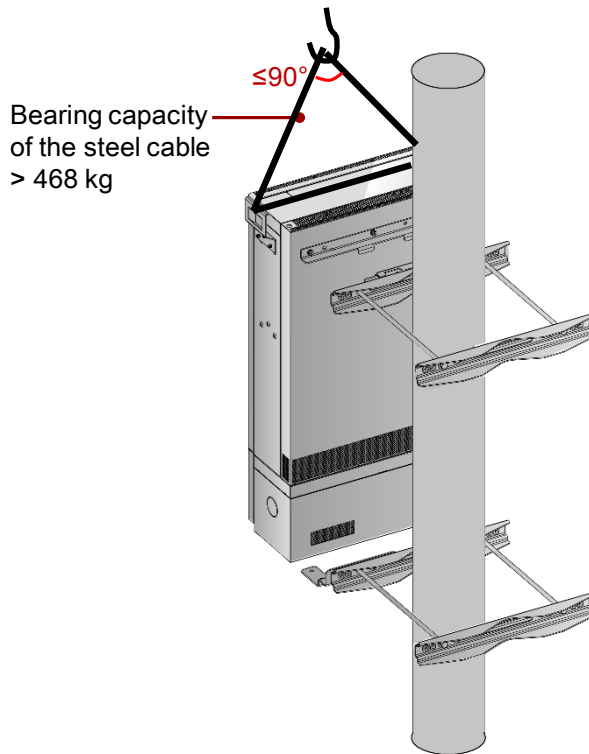




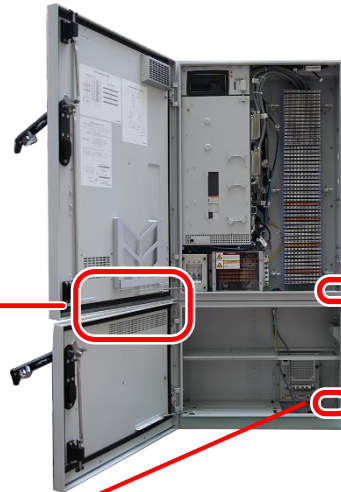
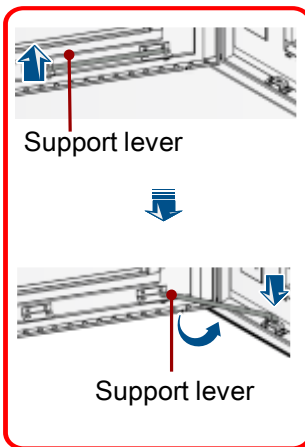
8 Installing the cabinet on a Pole

8.3 Fastening the Cabinet

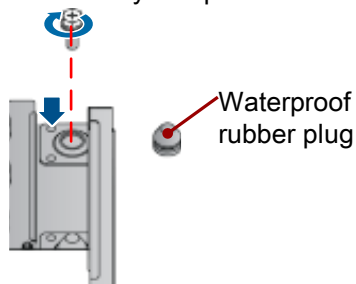
- 1 Use the steel cable to carry the cabinet onto the mounting fastening part.



- 2 Open and fasten the door, unfasten the waterproof rubber plug at the bottom of the cabinet, and then use a M8 × 25 screw to fasten the cabinet.



When the cabinet with the battery compartment.



When the cabinet without the battery compartment.





9 Installing the cabinet on a Concrete

9.1 Construct the Concrete Pedestal

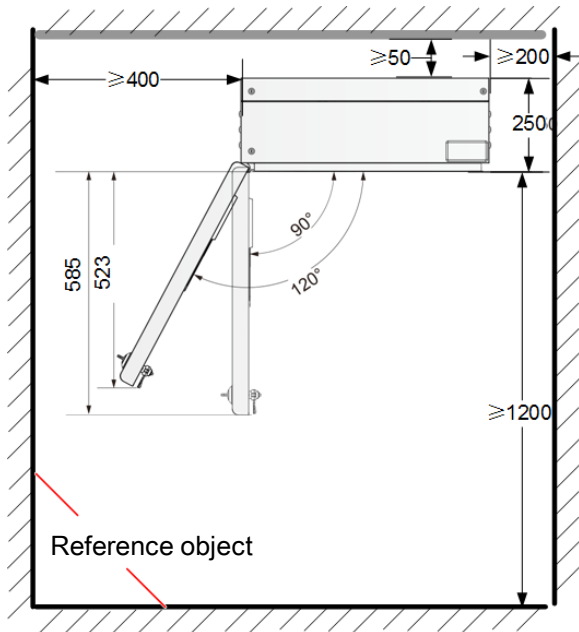
NOTICE

- Construct the concrete pedestal. Decide the specific method for constructing the concrete pedestal based on the local standards. Ensure the constructed concrete pedestal is horizontal. The horizontal deviation must be within 4 mm.
- Because holes drilled may be non-standard and have the risk of cracking, pre-install the bolts when constructing the concrete pedestal so that no hole drilling is required.

1 Plan the installation position.

Top view

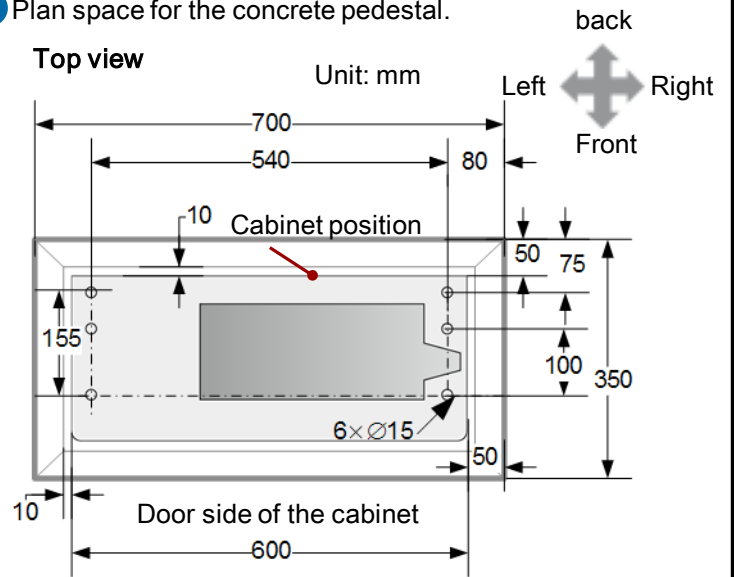
Unit: mm



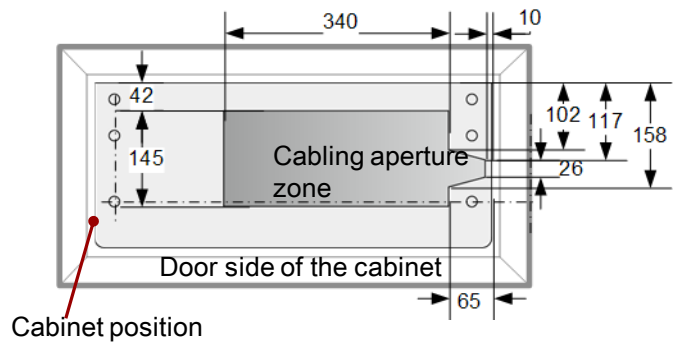
2 Plan space for the concrete pedestal.

Top view

Unit: mm

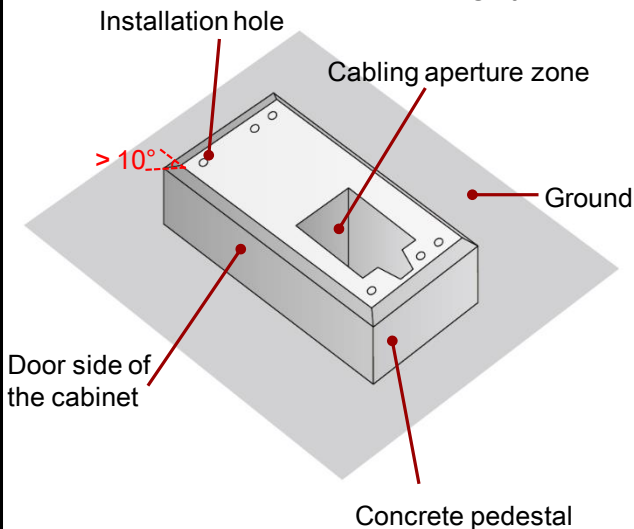


Dimensions of cabling aperture zone



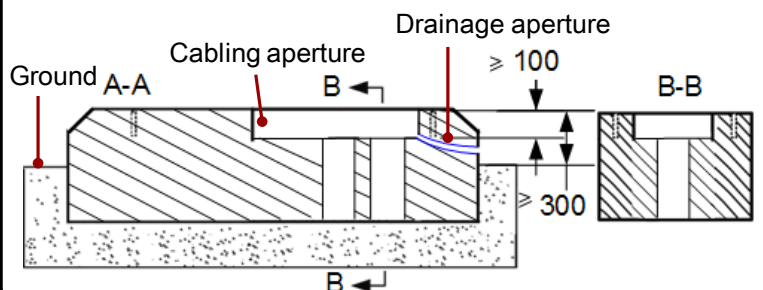
3 Constructing the concrete pedestal.

Unit: mm



Front view

Unit: mm





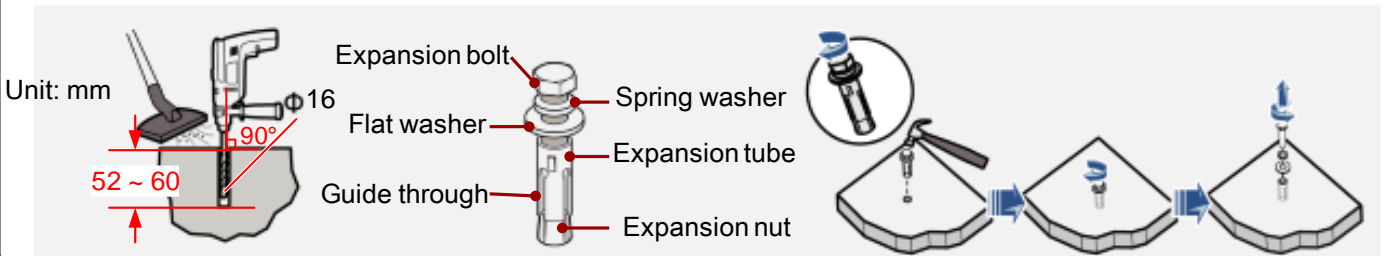
9 Installing the cabinet on a Concrete Pedestal

9.2 Fastening the Cabinet

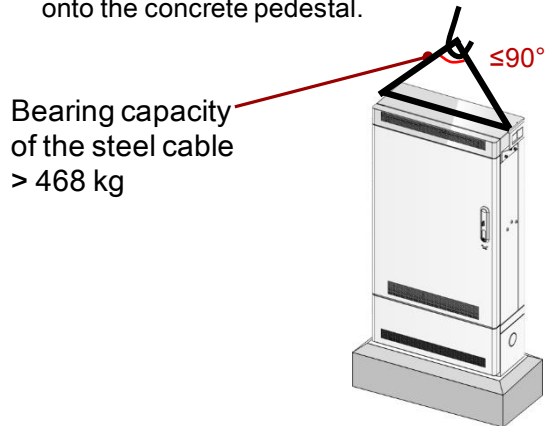
NOTICE

Hold the drill firmly and keep the drill bit vertical to the concrete pedestal. Ensure that the drill does not shake when you are drilling holes, as this may result in uneven holes.

1 Drill holes and install four M12 × 60 expansion bolts

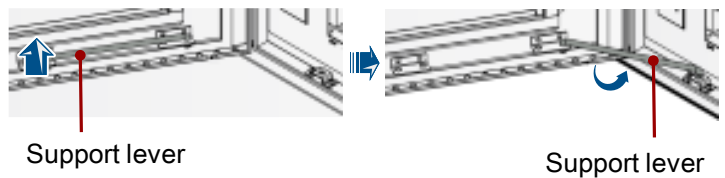


2 Use the steel cable to carry the cabinet onto the concrete pedestal.

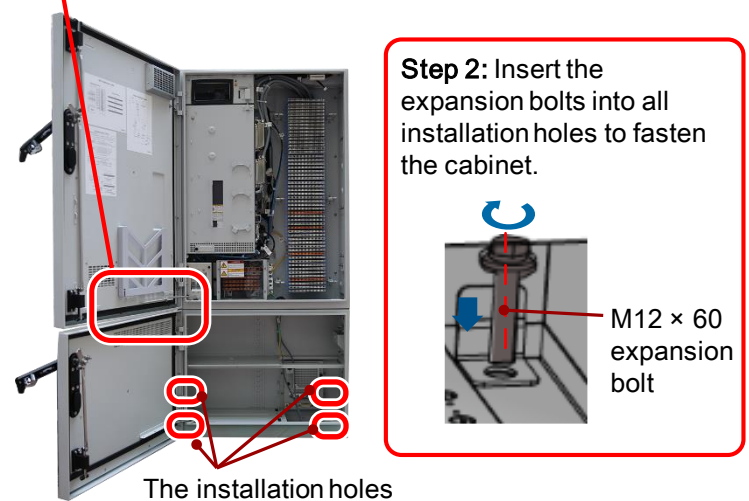


3 When the cabinet with the battery compartment

Step 1: Open and fasten the door.



Step 2: Insert the expansion bolts into all installation holes to fasten the cabinet.

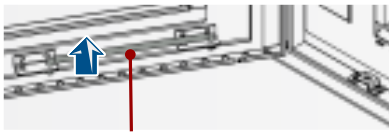




9 Installing the cabinet on a Concrete Pedestal

3 When the cabinet with the Li-ion battery compartment

Step 1: Open and fasten the door.

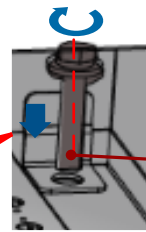
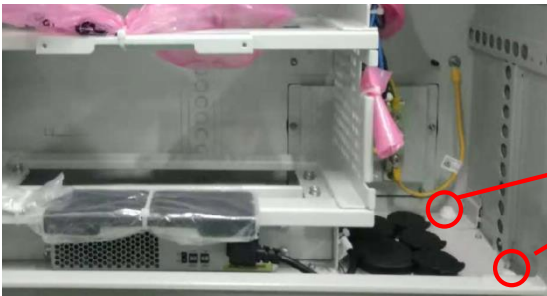


Support lever



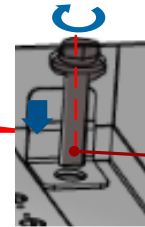
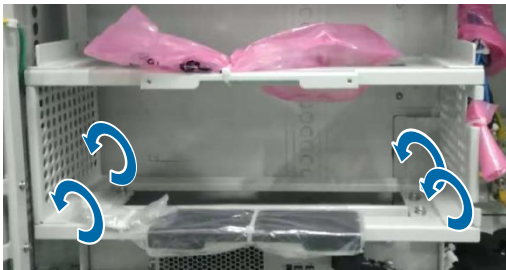
Support lever

Step 2: Use the M12x60 expansion bolts to secure the two mounting holes on the right side of the cabinet.

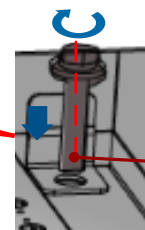


M12 × 60 expansion bolt

Step 3: Remove the four screws from the lithium battery support, and then use expansion bolts to secure the two mounting holes on the left side of the cabinet.



M12 × 60 expansion bolt



M12 × 60 expansion bolt

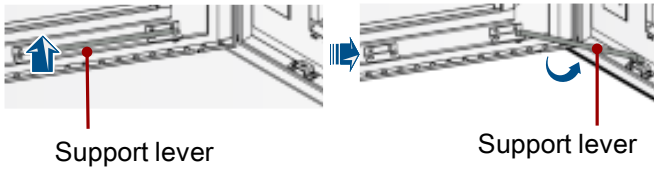
Step 4: Restore the Li-ion battery support to its original position and secure it.



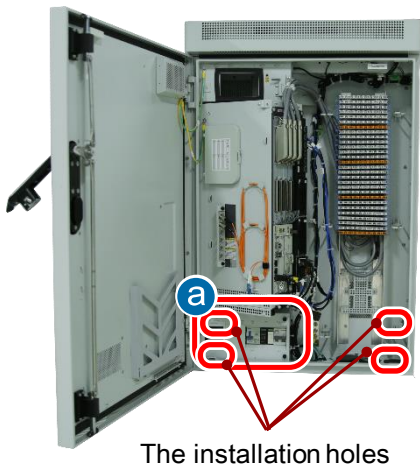
9 Installing the cabinet on a Concrete Pedestal

3 When no battery compartment is configured for the cabinet

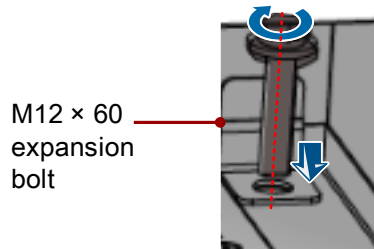
Step 1: Open and fasten the door of the cabinet.



Step 2: Loosen the 4 captive screws on the cover of the AC PDU to remove the cover and properly keep the cover.



Step 3: Remove the AC PDU, and remove the waterproof plugs from the installation holes.

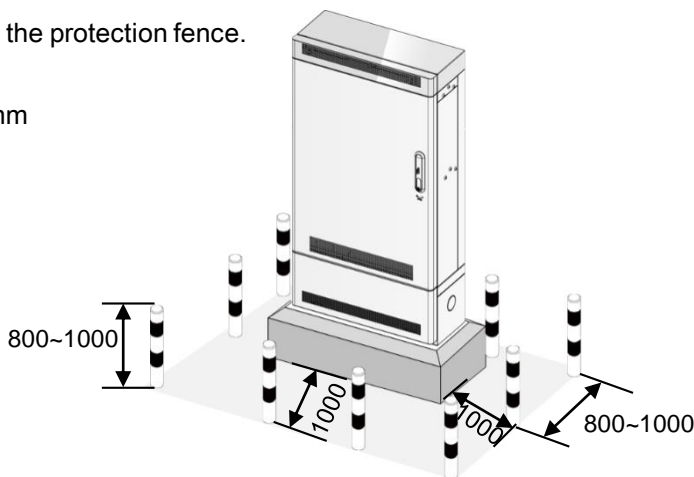


Step 4: Fasten the cabinet by using the socket ring wrench to fasten the M12 x 60 Expansion bolts (hole which is on the left and rear side of cabinet **a** can be left empty). Apply waterproof glue on the bottom of the cabinet and the concrete pedestal surfaces that contacts the cabinet.

The installation holes

4 Install the protection fence.

Unit: mm



- Construct the protection fence after installing the cabinet.
- Plan the coverage of the protection fence based on the ground plan to ensure that all doors of the cabinet can be opened without difficulties.



10 Installing the cabinet on an Elevated Platform

10.1 Construct the elevated platform

NOTICE

When installing the cabinet onto the elevated platform, ensure that the cable inlets are not blocked by steel channels.



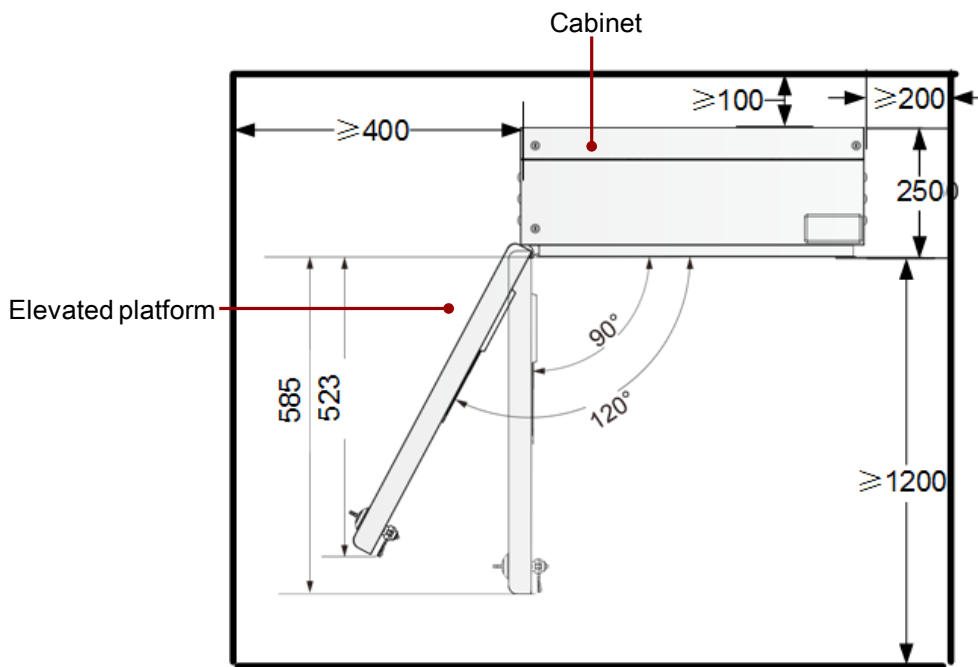
NOTE

The following construction plan for the elevated platform is only for reference. You can prepare a plan based on the actual requirements.

1 Plan space for the cabinet

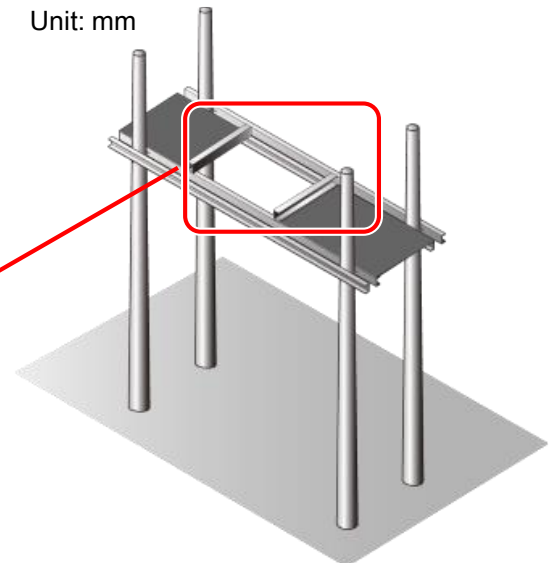
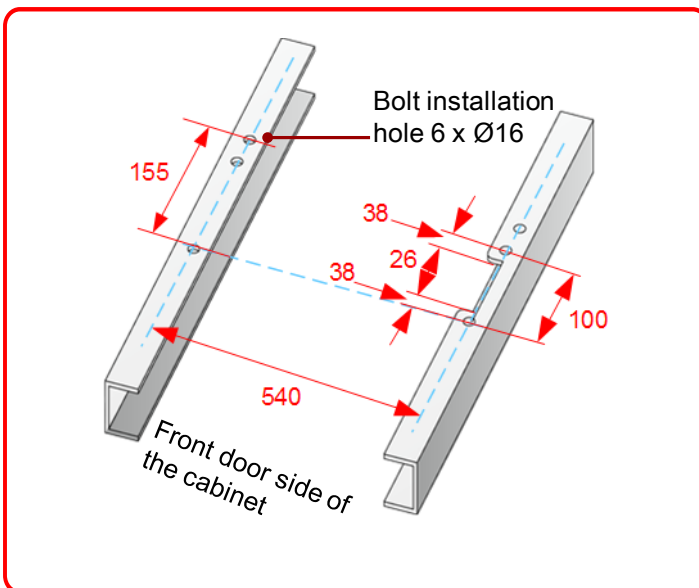
Unit: mm

Top view



2 Construct the elevated platform

Unit: mm

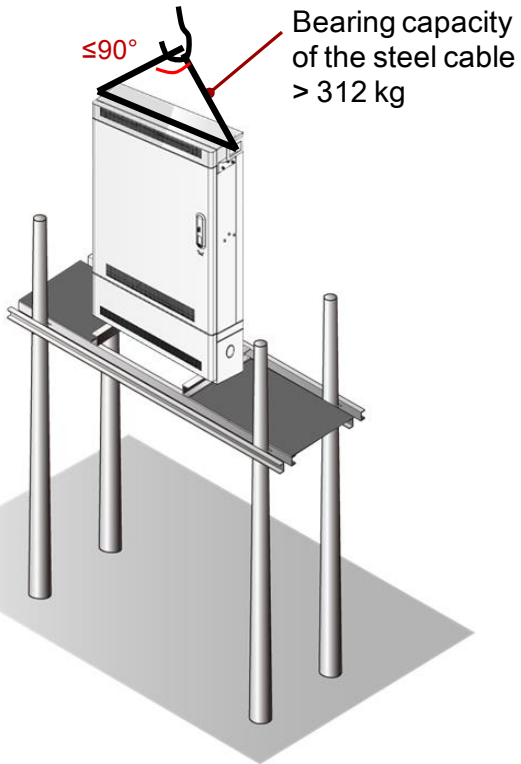




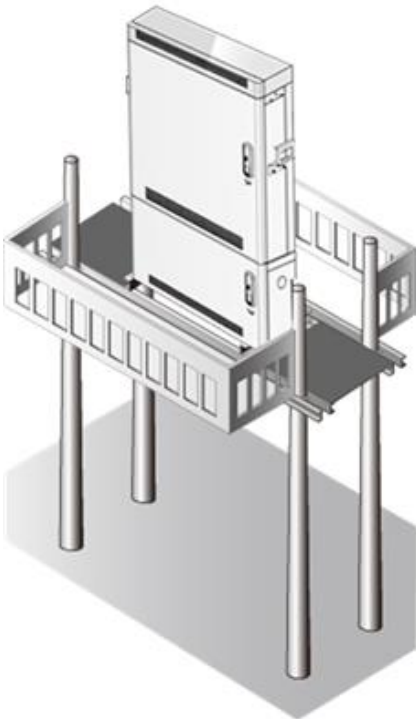
10 Installing the cabinet on an Elevated Platform

10.2 Fastening the Cabinet

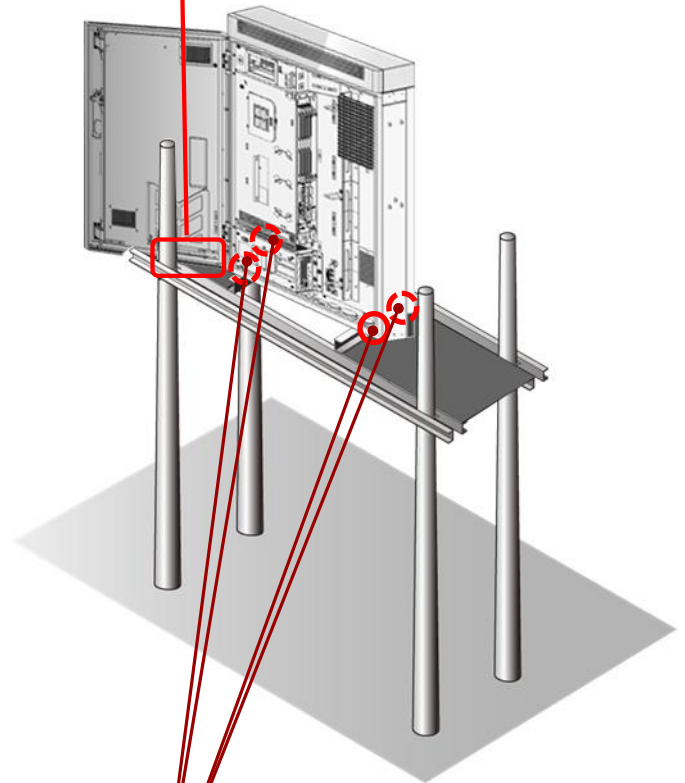
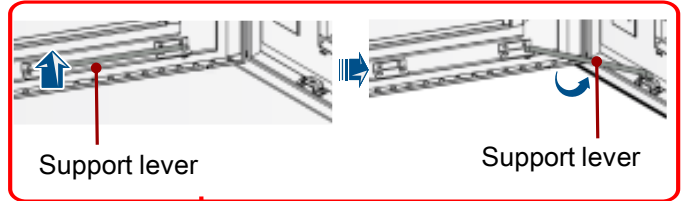
1 Carry the cabinet onto the elevated platform.



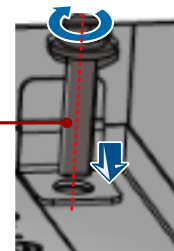
3 Set Up the Workbench



2 Open and fasten the door, and then use M12 × 60 expansion bolts to fasten the cabinet.



M12 × 60 expansion bolt





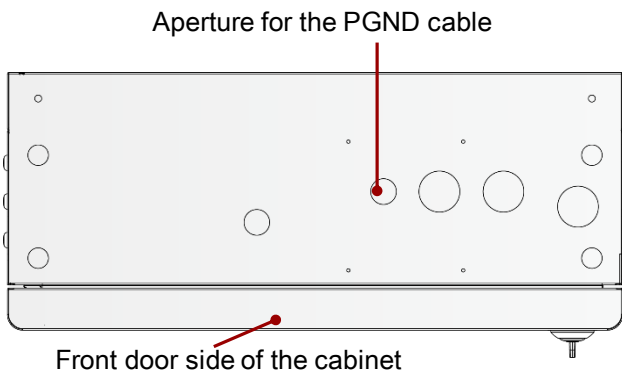
11 Routing Cables

11.1 Routing the PGND Cable

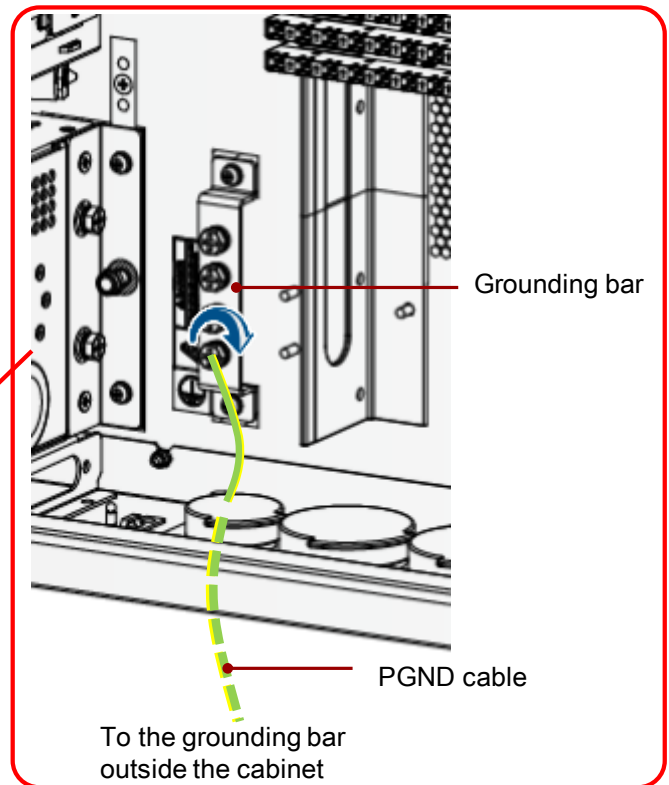
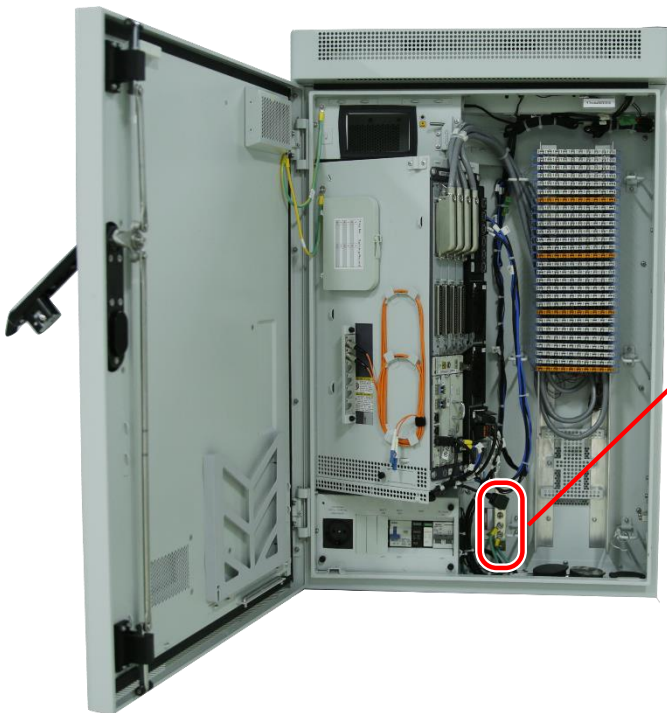
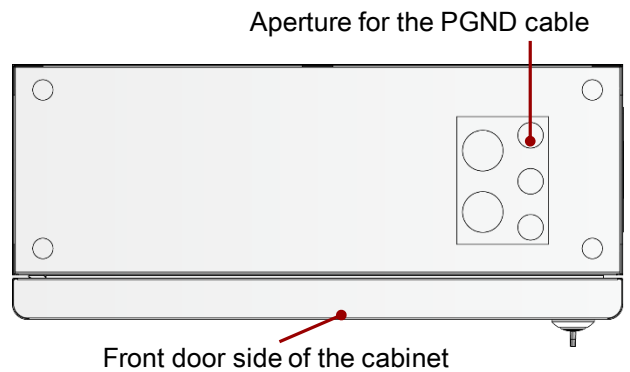
CAUTION

- Ensure that the cabinet is grounded properly, and the cabinet is safe and reliable; in addition, it is recommended to install an electrical leakage protective device on the power supply side of the site to protect personnel against the injury caused by the accidental electric shock on the device side.
- Route the PGND cable properly to ensure that the cabinet is protected from the lightning and other interferences. The cross-sectional area of PGND cable is not less than 16 mm².
- The cabinet is grounded properly and the ground resistance is smaller than 10 ohms.

Cabinet bottom (top view)



Battery compartment bottom (top view)





11 Routing Cables

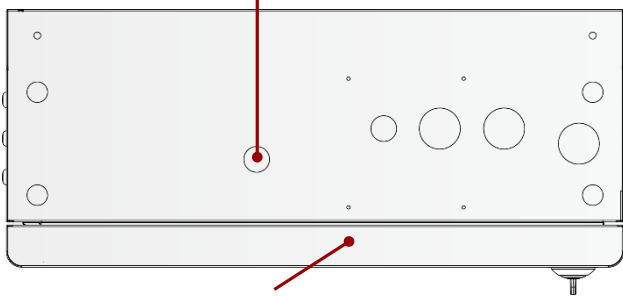
11.2 Routing the AC Power Cable

CAUTION

- An all-polarity disconnection device is installed on the power supply side of the site. Shut off the AC input, and attach labels on the switches that will be set during the cabling work.
- Insulate the AC terminals and all unnecessary bare parts.
- The cross-sectional area of AC power cable is not less than 10 mm².
- The L and N wires of the power cable cannot be reversely connected.

Cabinet bottom (top view)

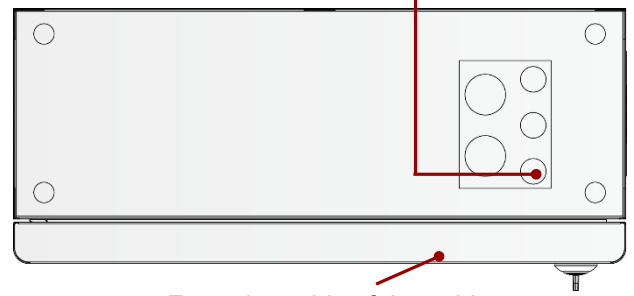
Cable hole of AC power cable



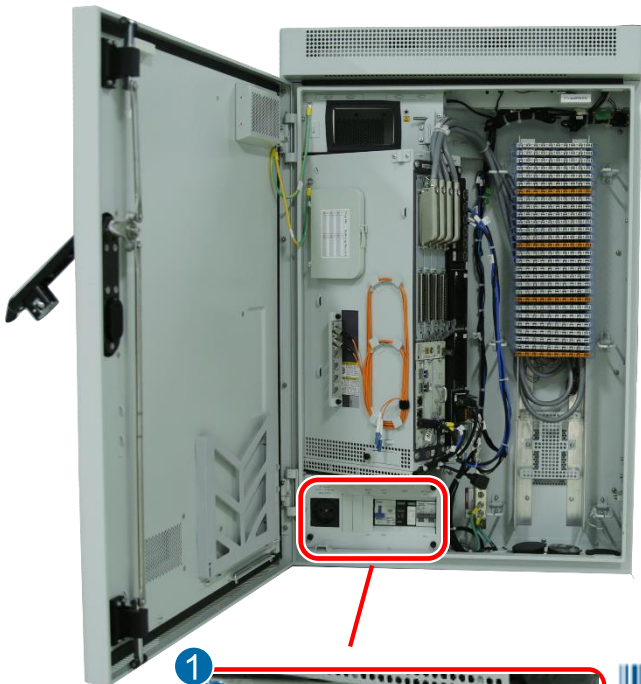
Front door side of the cabinet

Battery compartment bottom (top view)

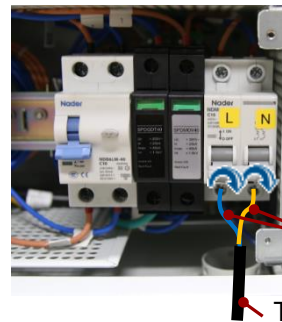
Cable hole of AC power cable



Front door side of the cabinet



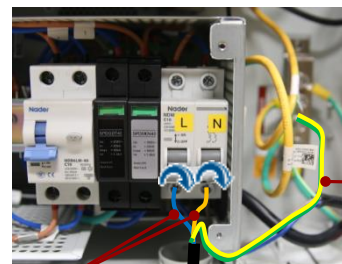
2 External AC power cable with 2 core wires (L wire, N wire)



AC power cable

To AC mains

3 External AC power cable with 3 core wires (PE wire, L wire, N wire)



PE wire

AC power cable

To AC mains



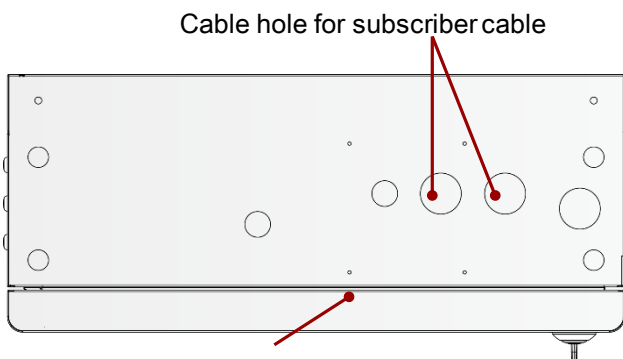
11 Routing Cables

11.3 Routing Subscriber Cables

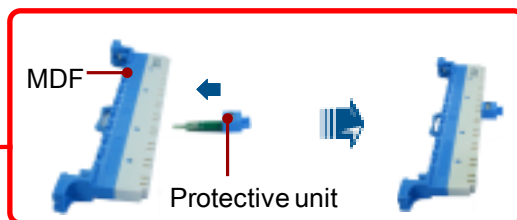
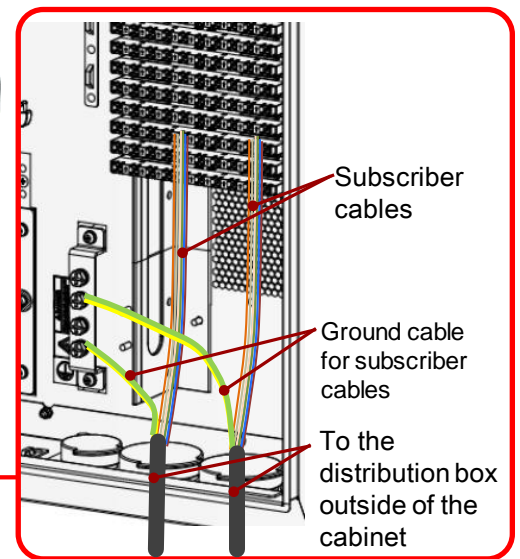
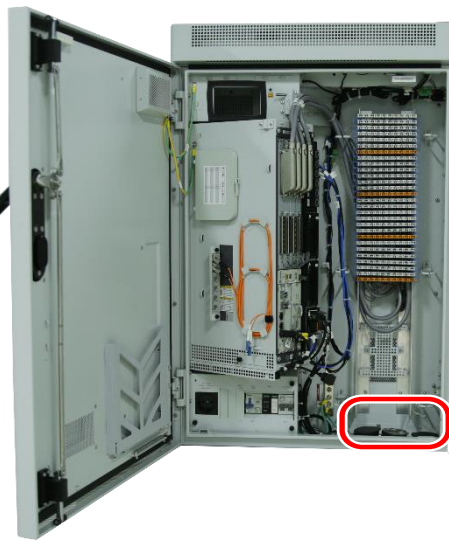
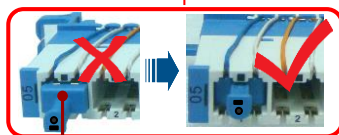
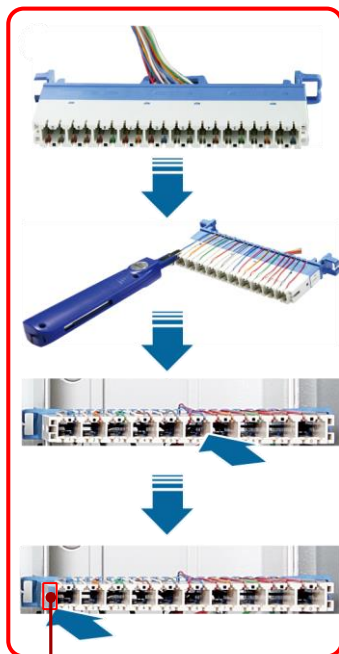
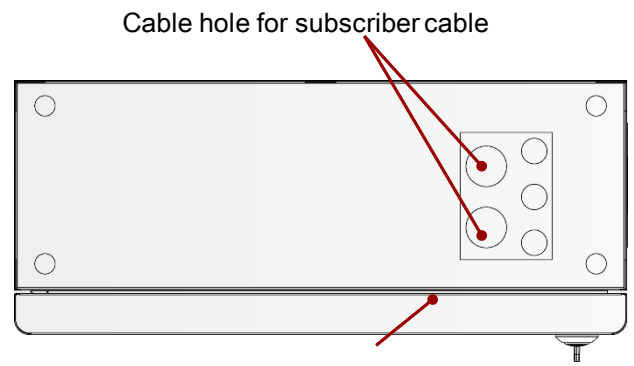
NOTICE

- After routing external user cables into the cabinet, reserve an extra length so as to clamp the cables to the cable side terminal block on the MDF.
- You must preprocess the external subscriber cables after routing the external subscriber cable into the cabinet. For detailed operation, see Appendix A Preprocess the External Subscriber Cables.
- When the service is enabled in the future, the protective unit must be installed for the cable side terminal block correctly.

Cabinet bottom (top view)



Battery compartment bottom (top view)

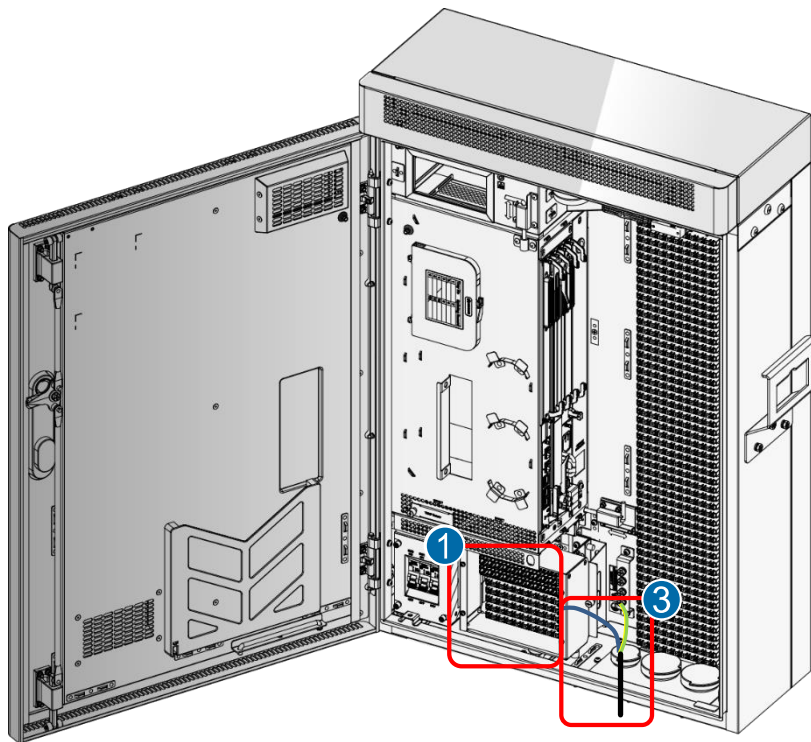




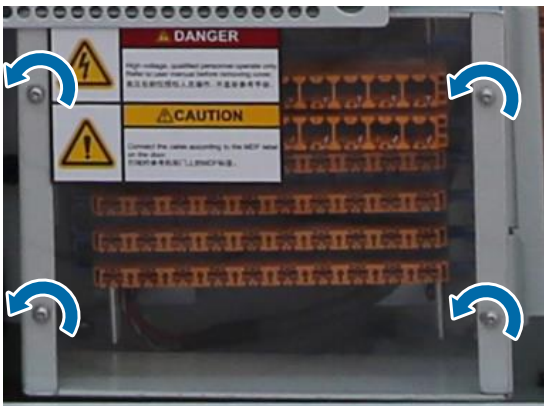
11.4 Connecting the RFT-V RPS Power Cable

CAUTION

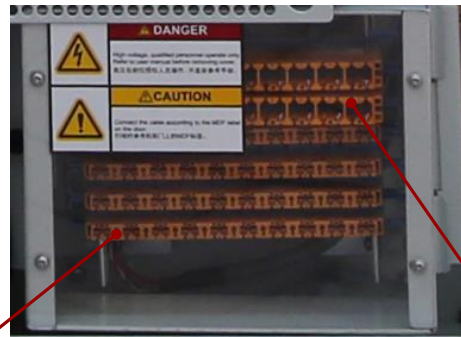
- Power off the central office (CO) RPS before connecting the RPS power cable, and power on the CO RPS after cable connection.
- After the external copper cable is routed from the RPS into the cabinet, connect the ground cable to the ground bar of the cabinet.
- After wiring, install the protective units and short-circuiting plugs on the exchange-side terminal blocks for remote power supply (also called protective terminal blocks) and cable-side terminal blocks for remote power supply (also called multiplexing terminal blocks). Otherwise, the cabinet cannot be powered on.
- The exchange-side terminal blocks and cable-side terminal blocks described in this section are specially used for remote power supply.



- 1 Remove the cover or all border bars of the terminal block box.

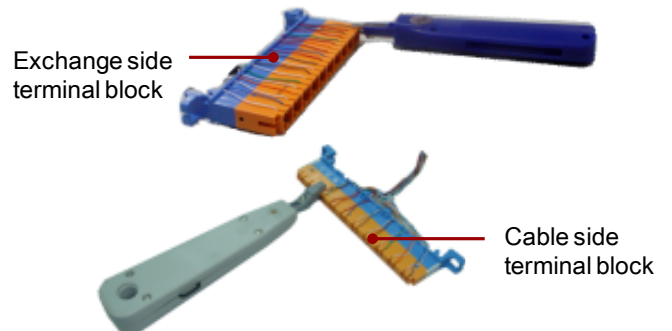
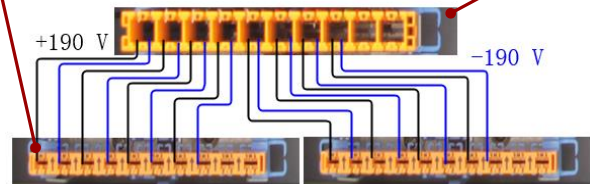
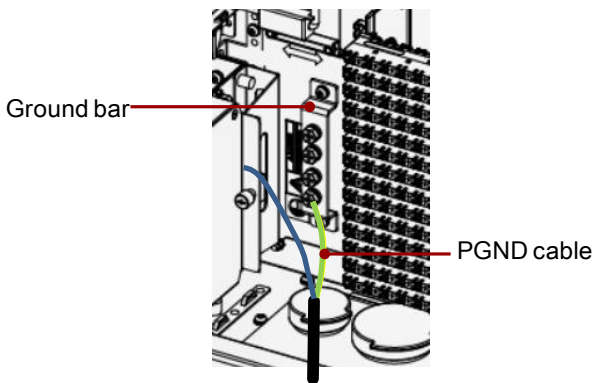


- 2 Use fiber patch cords to connect exchange side terminal blocks and cable side terminal blocks. For details about the connections, see "Diagram of Cable Connections Between the RPS and MDF".

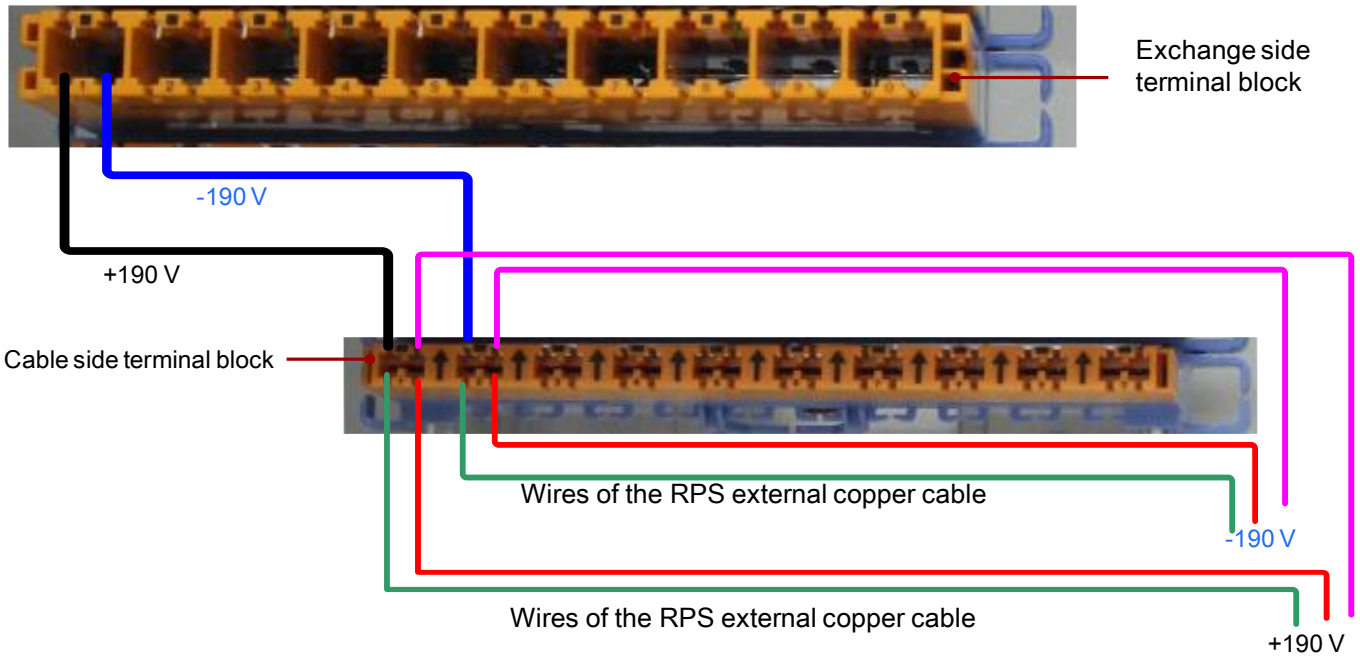


Cable side terminal block Exchange side terminal block

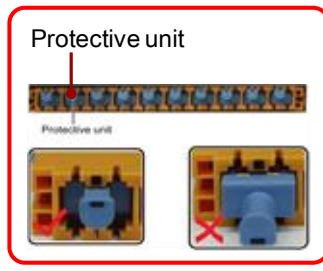
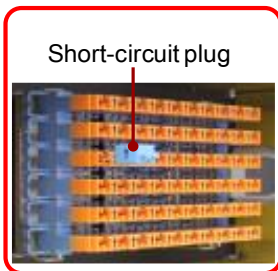
- 3 Lead the RPS power cable (copper cable) into the cabinet, connect the PGND cable in the power cable to the ground bar in the cabinet, and the rest of the wires to the device compartment of the cabinet.



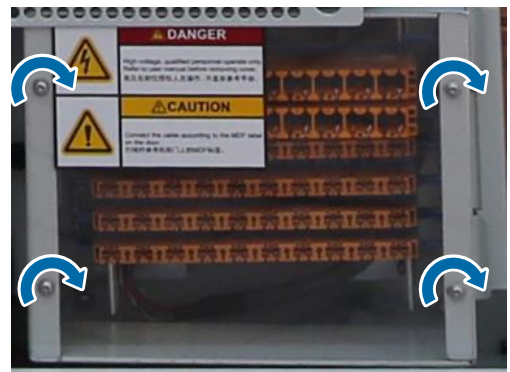
- 4 Use the impact tool to wire the wires from the external copper cable into the exchange side terminal blocks on the cord patching side according to "Diagram of Cable Connections Between the RPS and MDF". (The following figure uses 3- to-1 wire pair connection as an example.).



- 5 Install short-circuiting plugs on the cable side terminal blocks and protective units on the exchange side terminal blocks.



- 6 Use a Phillips screwdriver to tighten the screws that fix the cover of the terminal block cover.

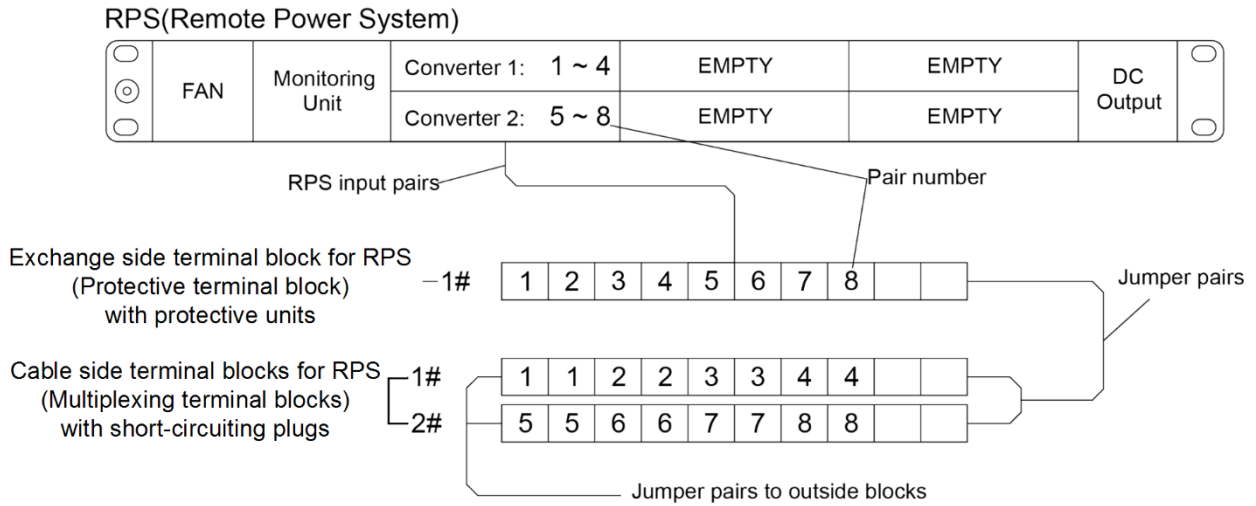




11 Routing Cables

11.5 Diagram of Cable Connections Between the RPS and MDF (RPS Power Supply)

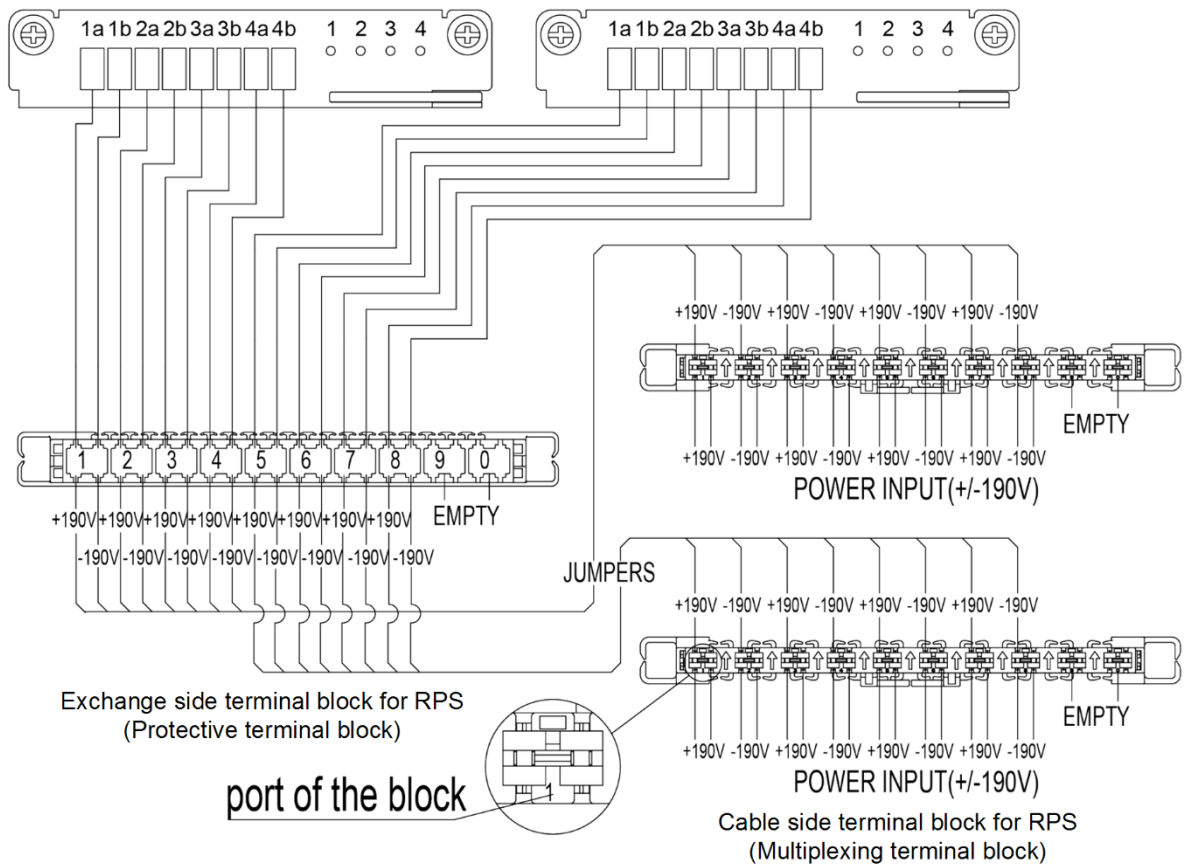
MDF Distribution Label for RFT-V POWER



Connection of two converter (take converter 1 and 2 for example):

Converter 1: 1~4 pairs

Converter 2: 5~8 pairs





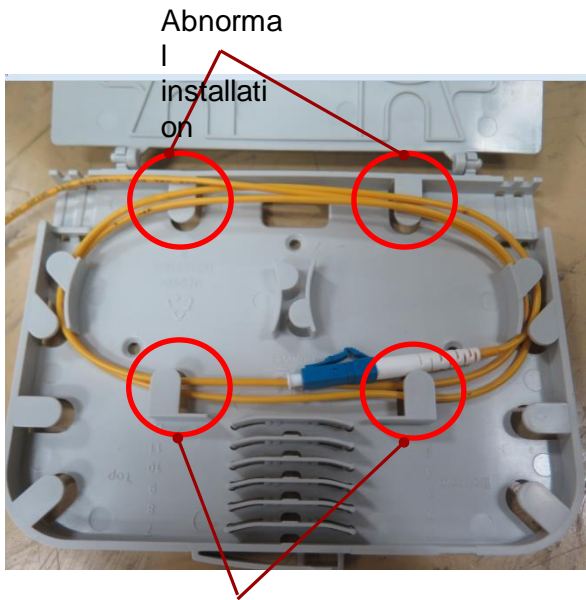
11 Routing Cables

11.6 Routing the Optical Cable or Optical Fiber

NOTICE

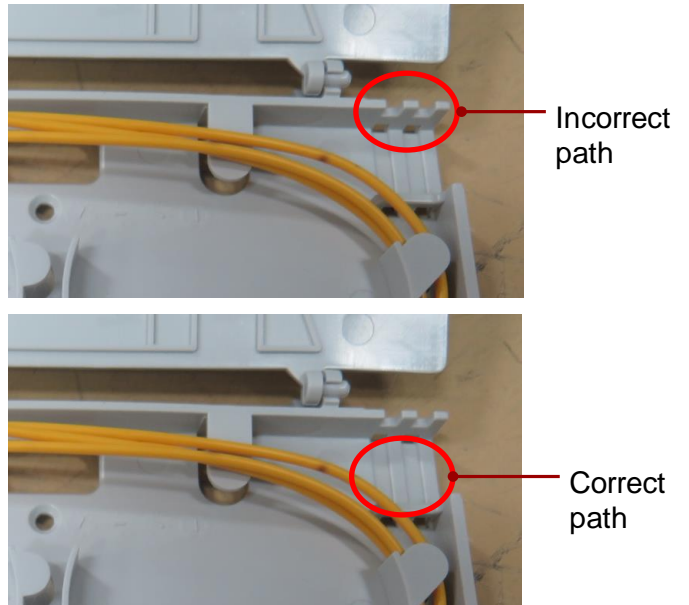
When routing optical fibers, do not press the optical fiber with the cover of the ODF.

Incorrect installation 1: The optical fiber is not properly positioned and is covered pressed by the ODF cover.



Correct installation

Incorrect installation 2: The tube is not routed in the correct path and is clamped by the ODF cover.





11 Routing Cables

11.7 Routing the Optical Cable or Optical Fiber (Upstream)

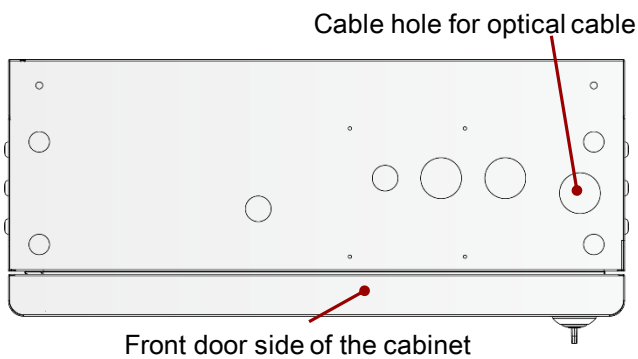
⚠ DANGER

Do not look into the optical port without eye protection.

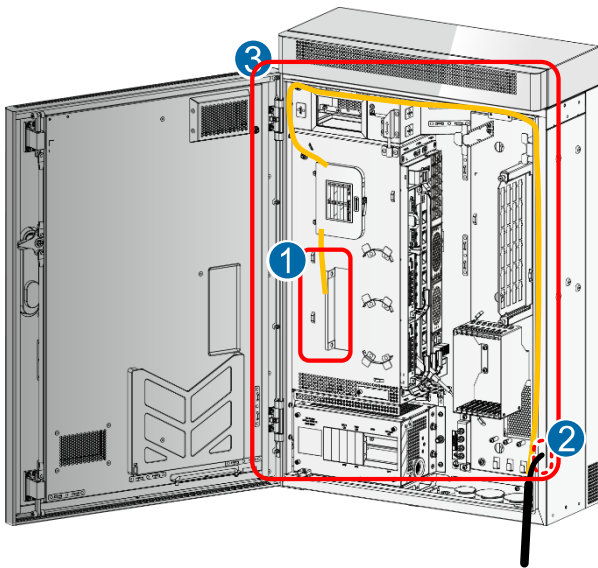
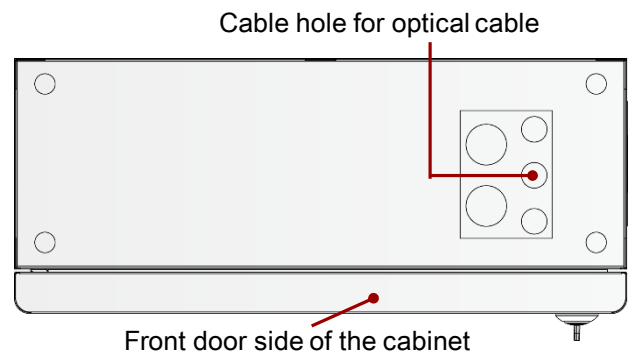
⚠ CAUTION

- You must use corrugated tube to protect core wires of optical cables in the cabinet, and use the binding strap to bind optical fibers; do not drag or bind the optical fiber too tightly.
- The bending radius of the optical cable core or optical fiber must be 20 times larger than the diameter of the optical cable core or optical fiber. Generally, the bending radius is larger than or equal to 40 mm.
- Only the qualified personnel are allowed to splice the optical fiber. Ensure that the optical fiber is spliced according to the on-site requirements and local practice.

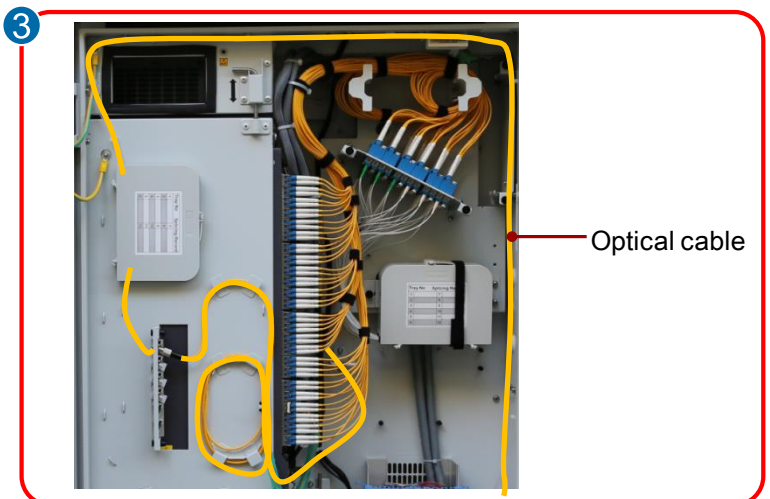
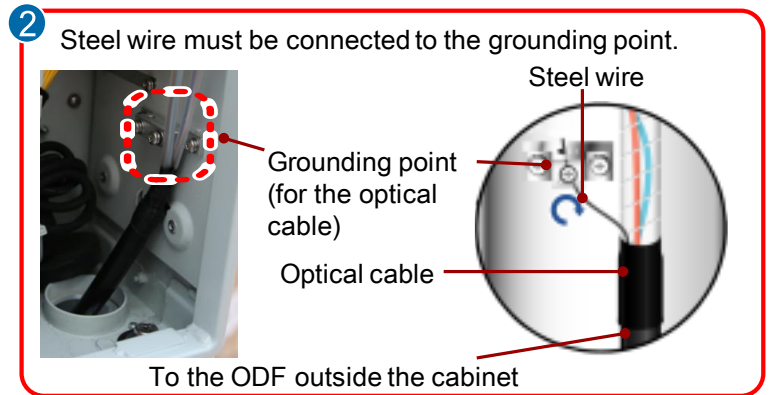
Cabinet bottom (top view)



Battery compartment bottom (top view)



1 Install the adapters attached to the cabinet on the installation rack of the adapter.





11 Routing Cables

11.8 Routing the Optical Cable or Optical Fiber (Downstream, Optical Configuration)

⚠ DANGER

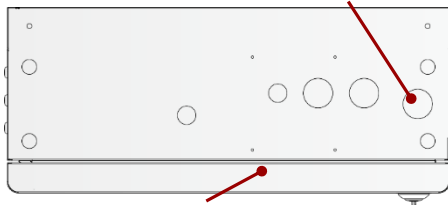
Do not look into the optical port without eye protection.

⚠ CAUTION

- You must use corrugated tube to protect core wires of optical cables in the cabinet, and use the binding strap to bind optical fibers; do not drag or bind the optical fiber too tightly.
- The bending radius of the optical cable core or optical fiber must be 20 times larger than the diameter of the optical cable core or optical fiber. Generally, the bending radius is larger than or equal to 40 mm.
- Only the qualified personnel are allowed to splice the optical fiber. Ensure that the optical fiber is spliced according to the on-site requirements and local practice.

Battery compartment bottom (top view)

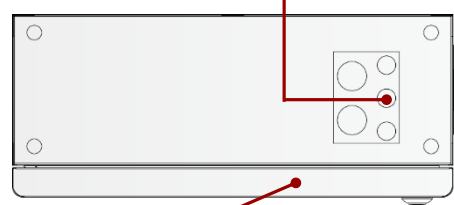
Cable hole for optical cable



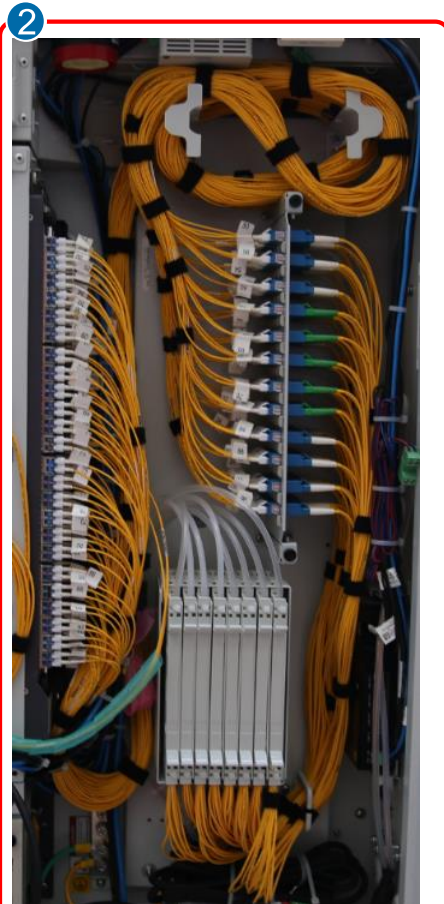
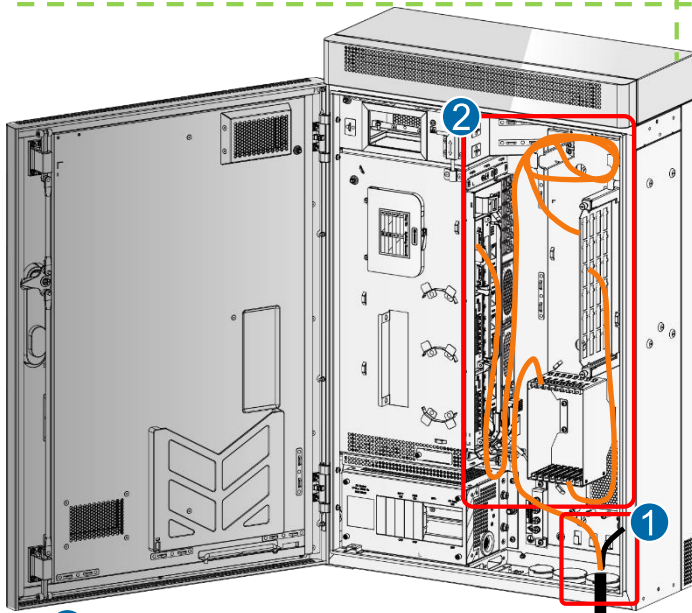
Front door side of the cabinet

Cabinet bottom (top view)

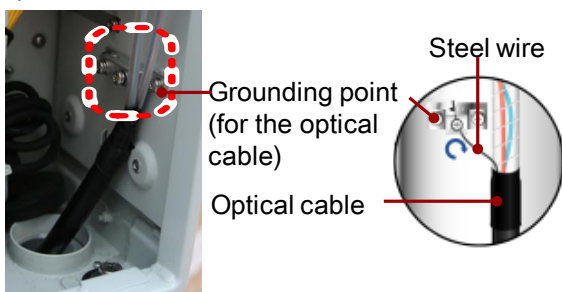
Cable hole for optical cable



Front door side of the cabinet



1 Steel wire must be connected to the grounding point.





12 Installing the Electronic Door Lock System

12.1 Installing the Door Lock (BOM: 02311EYT)

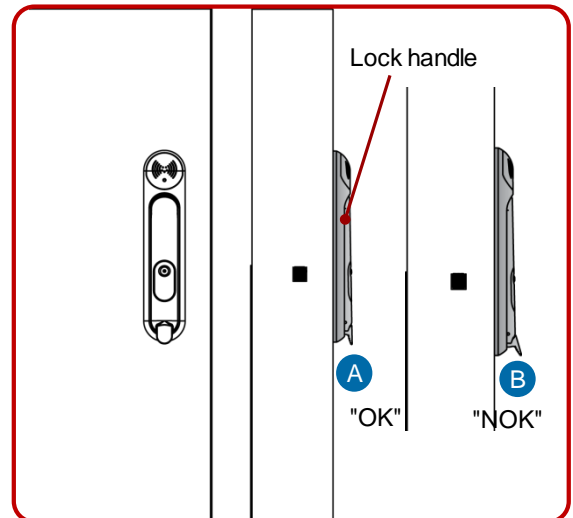
NOTE

- When installing an electric lock on a cabinet, adjust the door handle based on the direction in which the door is opened so that the door can be easily opened.
- The lock cylinder and lock body of an electronic lock are delivered together. Decide whether to replace the lock cylinder based on site conditions. If you decide to replace the lock cylinder, refer to 11 to replace the lock cylinder and keep the mechanical key properly.
- When the electronic door lock and battery anti-theft component are configured, the door lock cover in the battery anti-theft component is scrapped.
- Dispose of the lock tongue in the attachment of the electronic door lock.

CAUTION

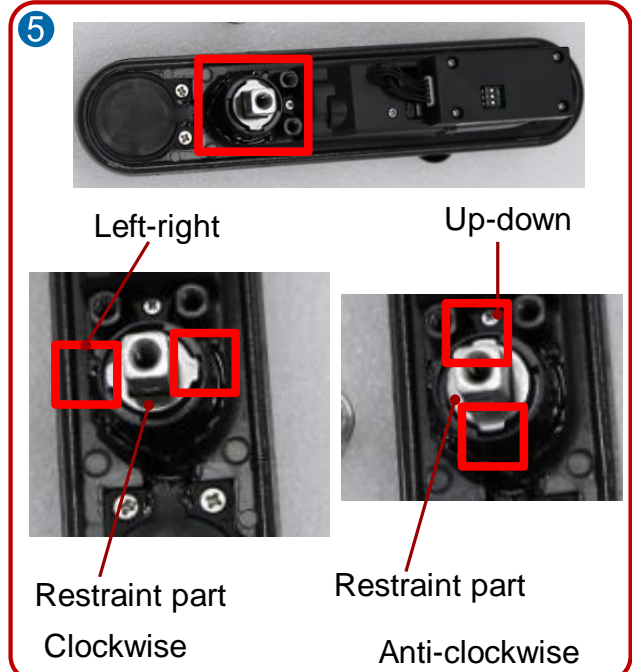
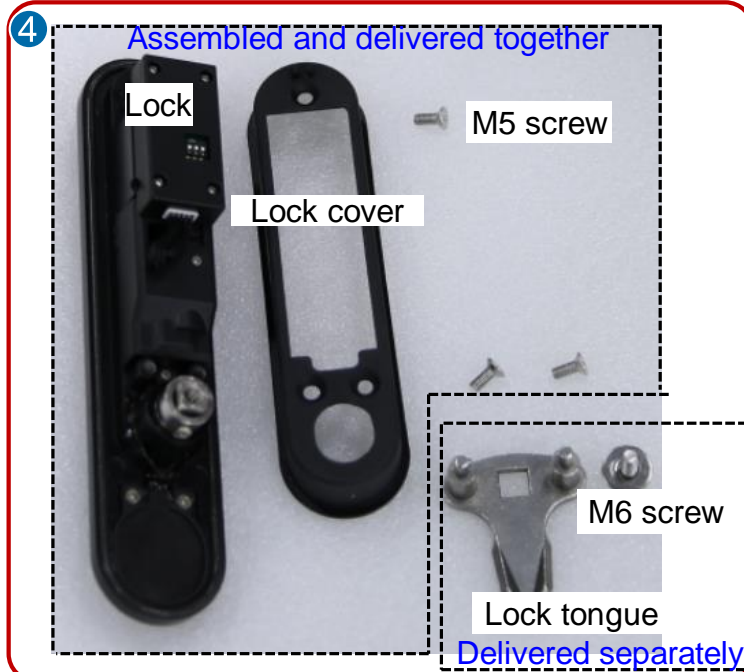
When you open or close the cabinet door using the electric lock, the following may occur if the lock handle lever is not in position (abutting the lock handle), as shown in figure B. In this case, you need to press the lock handle lever until it is in position and then swipe the access card again, as shown in figure A.

- 1 Open the cabinet door.
- 2 Wear the ESD wrist strap and connect its grounding end to the ESD jack on the cabinet, or wear ESD gloves.
- 3 Remove the HW-2802 lock from the cabinet. For details, see Common Maintenance Guide for Outdoor Cabinets.
- 4 Take out the electronic lock and disassemble the lock to facilitate subsequent installation.
- 5 (Optional) Install the restraint part and jump ring.



NOTE

The restraint part must be correctly assembled so that the lock handle moves in the same direction (clockwise or anti-clockwise) as the opening direction of the door.





12 Installing the Electronic Door Lock System

- ⑥ Clear foreign materials on the position where the new door lock is to be installed, and install the door lock on the door lock position of the cabinet.
- ⑦ Install the cover on the inner side of the cabinet door, and use a Phillips screwdriver to tighten the 3 screws clockwise on the cover.
- ⑧ Use a Phillips screwdriver to tighten the screws that fix the lock tongue.
- ⑨ Connect the communication terminal of the door lock to the communication cable of the expansion box. For details on Connections between the 2 compartment door locks and the expansion box, see "Table 1".
- ⑩ Verify that the cable of the electric lock does not interfere with the lock rod when the lock rod moves.
- ⑪ (Optional) Use a Phillips screwdriver to loosen the screws that fix the lock core and take out the lock core. Then, install the new lock core by following the installation procedure in a reverse order.
- ⑫ Use a box-end anti-theft wrench to clockwise fasten the anti-theft screw on the lock handle.

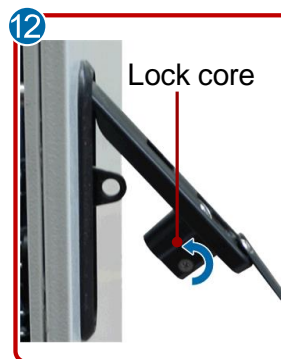
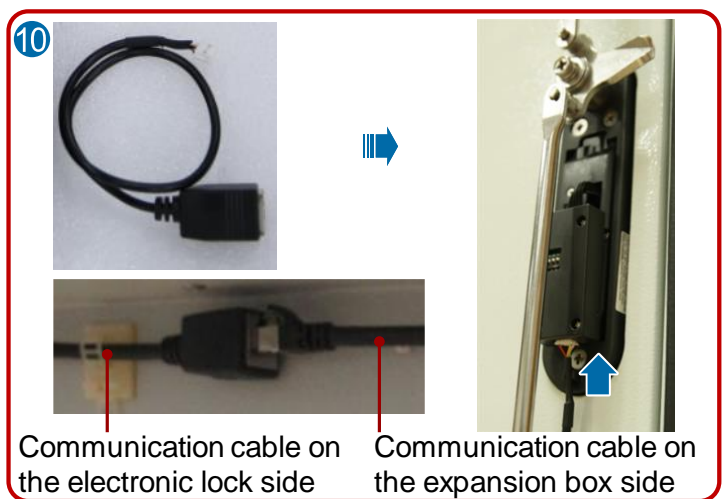


Table1 Connecting cables

Expansion Box Port Silk Screen	Connected Component
COM_OUT1	Door of the device compartment
COM_OUT2	Door of the battery compartment



12 Installing the Electronic Door Lock System

12.2 Installing the Anti-theft Screw

CAUTION

- The anti-theft screw can be replaced only after the electric lock is powered on. Before replacing the anti-theft screw, use the access card or user identity card to check whether the door can be unlocked.
- The electric lock core and anti-theft screw must be properly installed. Otherwise, the electronic door cannot protect the cabinet.



NOTE

- The recommended way of delivering the SPS security keys is as follows: The SPS security keys and electric lock cores are separately packed and delivered together with the SPS.
- Before completing the site deployment, configure CCU information such as the IP address, mask, NMS, and authority. In addition, record the name of the site where the cabinet is installed, serial numbers of the SPS security keys, and serial numbers of the electric lock cores.
- Steps 1 and 2 are recommended steps and you can perform these 2 steps based on the site requirements.

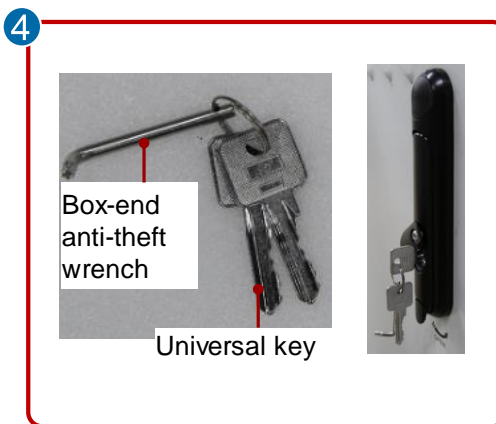
- 1 Deliver the SPS security keys to the Security Department, and deliver the electric lock cores to each site together with the cabinet based on the allocation rule.
- 2 Replace the electric lock cores at a site based on either of the following scenarios:

Scenario 1 If the power supply of the site has been set up and the cabinet can be powered on and work normally, replace the electric lock cores and anti-theft screws. Then, the customer can open the cabinet doors using the authorized access card and install and maintain service devices in the cabinets.

Scenario 2 If the power supply of the site has not been set up and the cabinet cannot be powered on, hand over the electric lock cores, anti-theft screws, and universal keys to the customer.

When the power supply of the site is available, the customer can assign an engineer to the site to replace the electric lock cores and anti-theft screws.

- 3 Use a box-end anti-theft wrench to anti-clockwise loosen the anti-theft screw on the lock.
- 4 Use an authorized access card or a universal key to open the electric lock.





12 Installing the Electronic Door Lock System

- 5 Take out the special anti-theft screw component, and secure it on the lock handle.
- 6 Use a box-end anti-theft wrench to anti-clockwise fasten the screw on the anti-theft screw component.
- 7 Lock the cabinet door.
- 8 Verify that the cables of the electric lock do not interfere with the lock rod when the lock rod moves.





12.3 Post-installation Check

No.	To Verify That...	Check Method
1	Boards support easy removal and reinstallation.	Check by trial use.
2	The ELU port is connected correctly.	Check the port connection.
3	The door locks are correctly installed, and cables are correctly connected.	Check the door locks and their connections.
4	Monitoring cables and AC power cables are not bundled together, and the cables are neatly and securely routed.	Check cable routing.
5	All power cables must use jointless copper cores and correctly connected according to operation standards.	Check all power cables and power cable connections.
6	All cables are intact without joints between two ends.	Check all cables.
7	The cabinet interior is clean without foreign materials, and the air intake/exhaust vent is not blocked.	Check the interior of the cabinet and air vents.



13 Installing Batteries

13.1 Installation Requirements

NOTICE

- Before powering on the cabinet, do not connect the batteries and power module; otherwise, the batteries will discharge to the power module, affecting the battery service life.
- Record the last charging time (The last time charged at __) and required next charging time (Refresh Charging No Later than __) marked in the package container to ensure timely charging. If the batteries are stored overtime without any recharging, the batteries will bulge and their capacity will decrease, resulting in a shorter service life.
- Unpack the packaged batteries only after they arrive at the installation site. Install batteries grouped in the package container. Do not use together batteries of different types, specifications, capacities, and batches in a group.
- Before powering on the batteries, perform the pre-installation check.



Install the batteries according to the field installation environment:

- If the cabinet is powered on within the day when it is installed, place the batteries into the battery compartment and connect them.
- If the cabinet is not powered on within the day when it is installed, store the batteries in an appropriate environment (battery storage environment: temperature 5°C-45°C and relative humidity \leq 90% RH) for proper maintenance and management. Otherwise, the batteries will have unrecoverable damages. If the cabinet is not planned to be powered on for a short period (1-2 months), it is recommended that the batteries be stored in the warehouse for subsequent maintenance and management.



13 Installing Batteries

13.2 Pre-installation Check

Check Item	Requirement
Battery outline	<ul style="list-style-type: none">•No distortion, flaw or disrepair is detected in the appearance of the battery.•The terminals are protected properly.•There is no stain or acid liquid on the surface of the battery.•The battery terminals are protected against erosion.
Battery structure	<ul style="list-style-type: none">•The positive and negative leads on the battery are marked to facilitate connections.•The polarities, terminals and visual dimensions of batteries must be consistent with the sample product picture.•Spare parts, such as bolts, nuts, washers, and connection cables that are delivered should be consistent with the delivery list.
Battery storage period (overtime or not) (The storage period indicates the period since the last charging.)	<p>If the batteries are stored overtime, make a record and consult professional personnel for processing. Perform the following operations by referring to Maintenance Guide of Outdoor Cabinets:</p> <ul style="list-style-type: none">•If the storage period of the batteries is 8-12 months, recharge the batteries.•If the storage period of the batteries is 12-18 months, activate the batteries.
Battery usability check	<p>A battery must be replaced if one of the following situations occurs:</p> <ul style="list-style-type: none">•The battery has been stored for more than 18 months without any processing (battery recharging is required when the storage period of the batteries is 8-12 months, and battery activation is required when the storage period of the batteries is 12-18 months).•The small-current discharge time (when the power module is connected to the batteries but is not powered on) is over two months.•The open circuit voltage is lower than 12 V.
Battery maintenance record	The power-on time must be recorded.



13 Installing Batteries

13.3 Connecting Batteries

⚠ DANGER

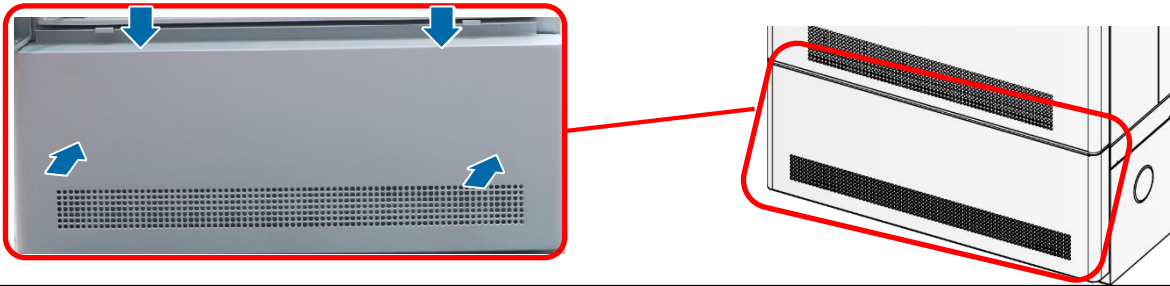
Follow exactly the installation procedure to install the batteries. Wrap the metal installation tools, such as wrench, with insulation tape for insulation. Any short circuit may hurt personnel and damage the equipment.

⚠ CAUTION

- Follow exactly the installation procedure to install the batteries. Wrap the metal installation tools, such as wrench, with insulation tape for insulation. Any short circuit may hurt personnel and damage the equipment.
- Ensure that the polarity position of each battery is correct. The connection between two batteries, or the connection between batteries and battery interface of the device must be firm and correct.
- Keep a space of at least 10 mm between batteries for heat dissipation.
- After the batteries are installed, the battery parameters must be configured during software commissioning. Otherwise, the battery life may be shortened.

1 Switch off the battery circuit breaker of the AC main equipment or the BATT circuit breaker of the ETP4860 power system.

2 Open the front door of the cabinet, then turn the fasteners on the cover of the battery compartment upwards, and then open the cover of the battery compartment.



3 If a cabinet is configured with 20 AH or 40 AH batteries, take out the batteries, connect the battery cables to the wiring terminals of the batteries, blue cable connect battery "-", black cable connect battery "+", then close the protective cover.



NOTICE

- Fasten battery cables with M6 screws (fastening torque: 48 kgf·cm).
- The appearance of the battery is only for reference, which may differ from the actually delivered battery.

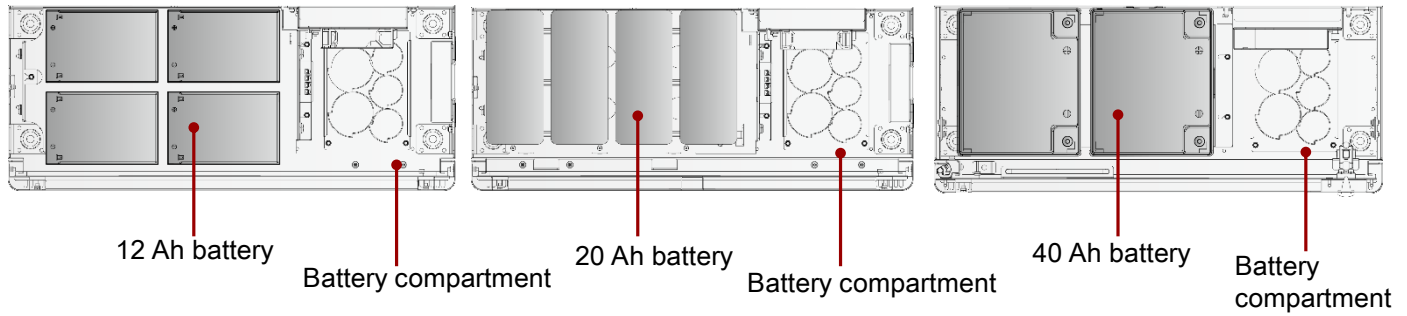


protective cover



13 Installing Batteries

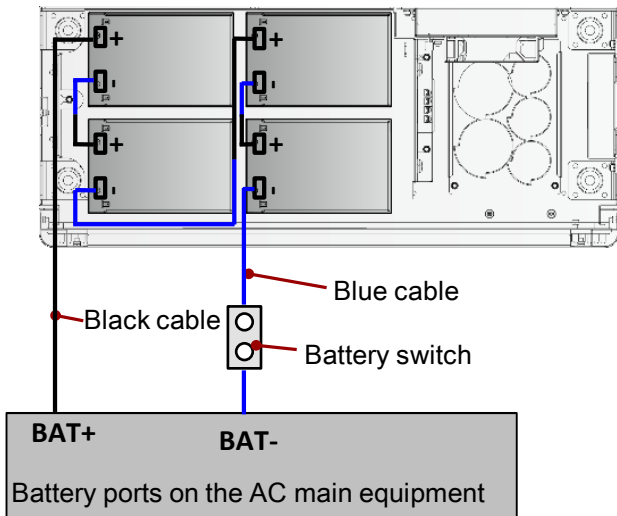
4 Put the battery into the battery compartment.



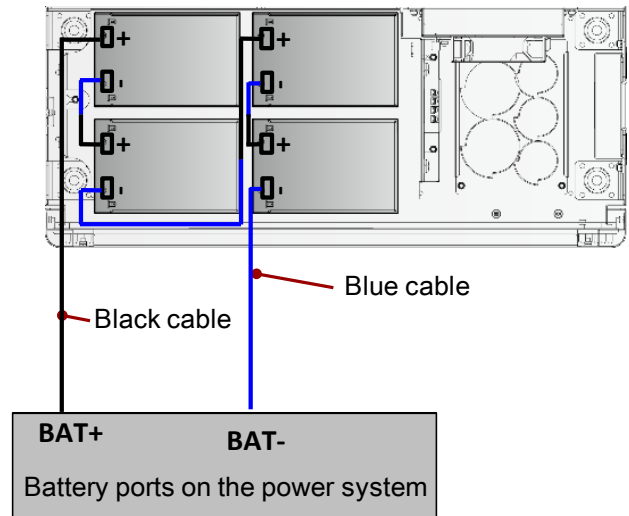
5 Connect the cables of the four batteries in series, and connect the cables to the battery port of the AC main equipment or the BATT+ and BATT-wiring terminals of the power supply.

Cable connection when a cabinet is configured with a 12 AH battery:

When the AC main equipment is configured:

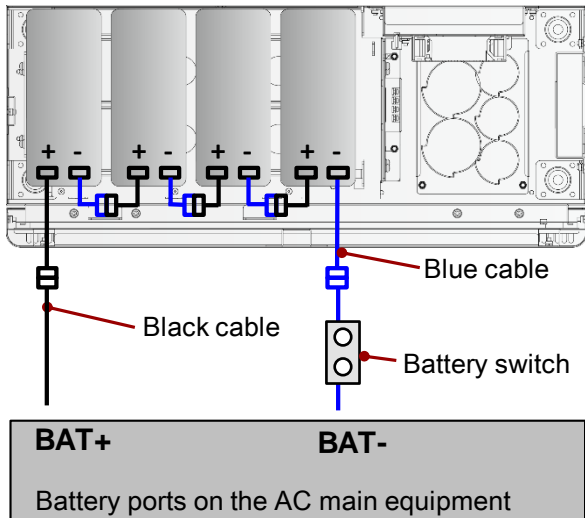


When the DC main equipment is configured:

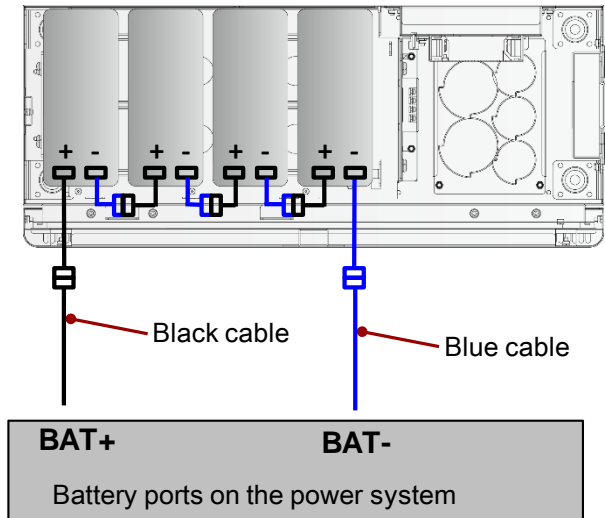


For cabinets configured with 20 AH and 40 AH batteries, the cable connections are the same. The following uses the 20 AH battery configuration as an example:

When the AC main equipment is configured:



When the DC main equipment is configured:



6 After confirming that the cable connections are correct, switch on the battery circuit breaker of the AC main equipment or the BATT circuit breaker of the ETP4860 power system.



14 Installing Li-ion Batteries

14.1 Installing Li-ion Batteries (Configured with a 20 Ah Battery Compartment)

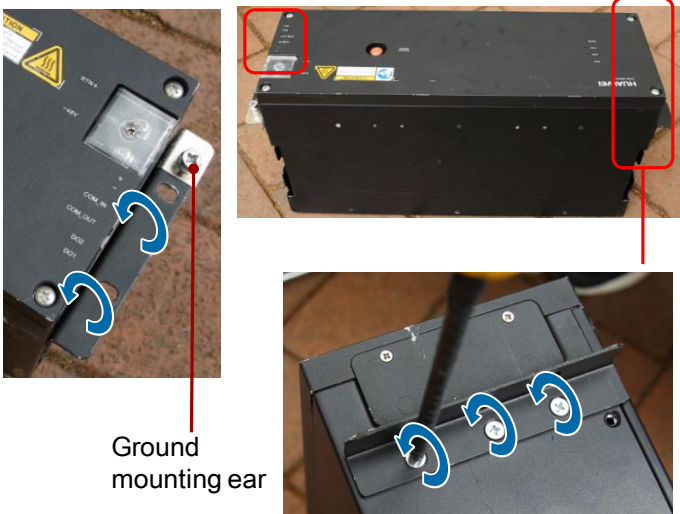
- 1 Unpack and take out the Li-ion battery.



- 2 Open the cabinet door, use a cable cutter to cut the cable ties, and remove the accessories (side mounting ears and screws).



- 3 Remove the mounting ears from both sides of the Li-ion battery, and keep the ground mounting ear.



Ground mounting ear

- 4 Unpack the accessories and install the side mounting ears on the Li-ion battery.



- 5 Hold the two sides of the Li-ion battery with both hands, place it on the Li-ion battery support, and push it until the mounting ears contacts the support.

CAUTION

Do not hold the side mounting ears of the Li-ion battery to avoid injury to your hands.



- 6 Use the attached Phillips pan head screws (M4x10) to secure the Li-ion battery.





14 Installing Li-ion Batteries

14.2 Connecting Li-ion Battery Cables (Configured with a 20 Ah Battery Compartment)

⚠ DANGER

- When installing the lithium battery, strictly follow the operation instructions. Metal installation tools (such as wrench) must be wrapped with insulation tape. Any short circuit may cause serious consequences for both the personnel and equipment.
- Before routing lithium battery power cables, ensure that the battery switch is OFF.
- Ensure that the connection and polarity between the lithium battery and the power system are correct.

- 1 Remove the PE bag.



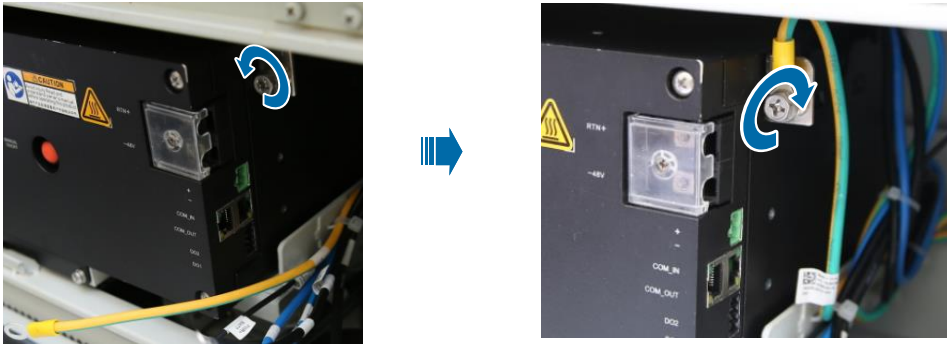
- 2 Remove the heat shrink tubes of the Li-ion battery power cables using a knife.





14 Installing Li-ion Batteries

- 3 Loosen the screw on the ground mounting ear of the Li-ion battery, and connect the reserved ground cable to the ground terminal of the Li-ion battery.



- 4 Use a Phillips screwdriver to remove the plastic cover from the power port of the Li-ion battery, check the power cable labels (black positive and blue negative), connect the power cables to the Li-ion battery, and close the plastic cover.



- 5 Install the build-out resistor on the COM_OUT port of the Li-ion battery.



- 6 Connect the communications cable to the COM_IN port on the Li-ion battery.





14 Installing Li-ion Batteries

14.3 Installing Li-ion Batteries (Configured with a 40 Ah Battery Compartment)

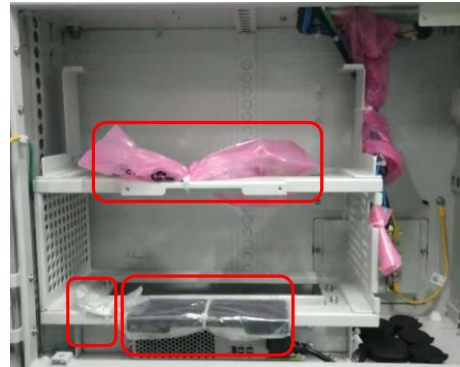
NOTE

The Li-ion battery near the bottom of the battery compartment is defined as the first Li-ion battery.

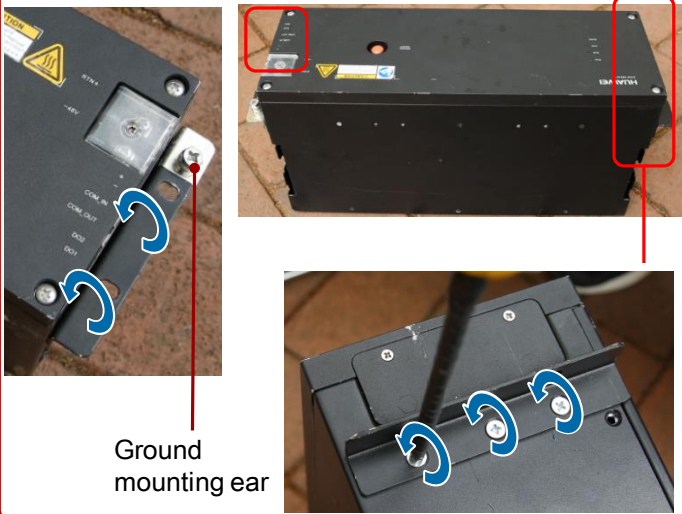
1. **Unpack and remove the Li-ion batteries.**



2. **Open the cabinet door, use a cable cutter to cut the cable ties, and remove the accessories (side mounting ears, communications cables, and screws).**



3. **Remove the mounting ears from both sides of the Li-ion batteries, and keep the ground mounting ears.**



4. **Unpack the accessories and install the side mounting ears on the Li-ion batteries.**





14 Installing Li-ion Batteries

- 5 Hold the two sides of the first Li-ion battery with both hands, place it on the Li-ion battery support, and push it until the mounting ears contact the support.

CAUTION

Do not hold the side mounting ears of the Li-ion battery to avoid injury to your hands.



- 6 Install the second Li-ion battery in the Li-ion battery support in the same way.



- 7 Use the attached Phillips pan head screws (M4x10) to secure the Li-ion batteries.





14 Installing Li-ion Batteries

14.4 Connecting Li-ion Battery Cables (Configured with a 40 Ah Battery Compartment)

⚠ DANGER

- When installing the lithium batteries, strictly follow the operation instructions. Metal installation tools (such as wrench) must be wrapped with insulation tape. Any short circuit may cause serious consequences for both the personnel and equipment.
- Before routing lithium battery power cables, ensure that the battery switch is OFF.
- Ensure that the connection and polarity between the lithium batteries and the power system are correct.

1 Use a cable cutter to cut the cable ties and remove the PE bag.



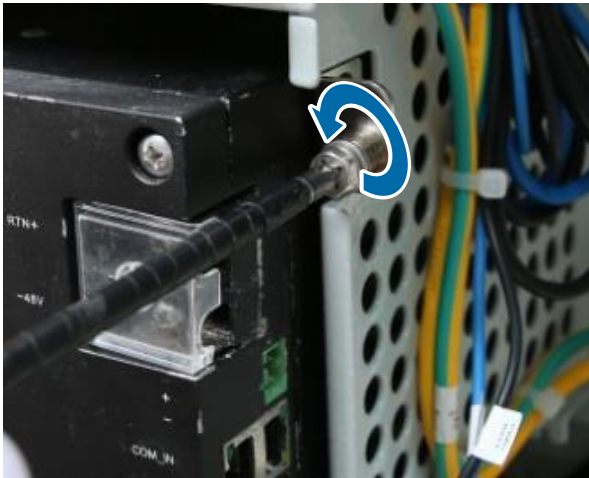
2 Remove the heat shrink tubes of the Li-ion battery power cables using a knife.



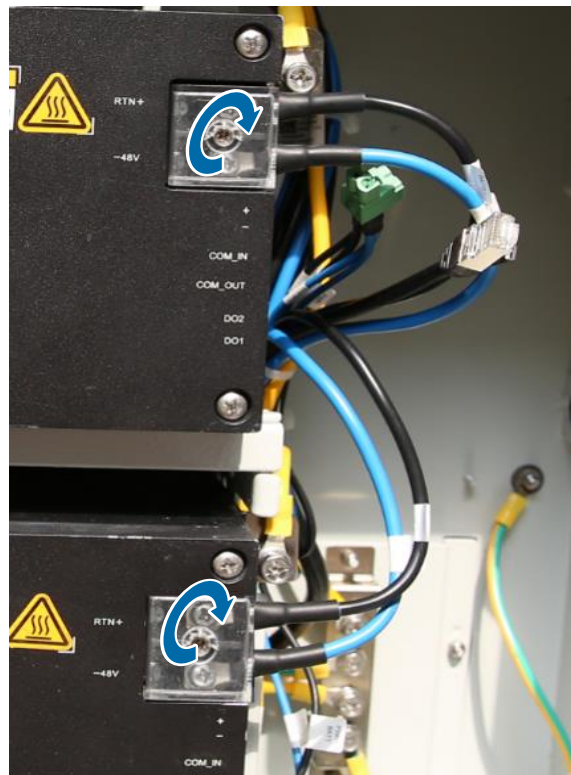


14 Installing Li-ion Batteries

- 3 Loosen the screws on the ground mounting ears of the two Li-ion batteries, and connect the ground cables to the ground terminals of the Li-ion batteries.



- 4 Use a Phillips screwdriver to remove the plastic cover from the power port of the Li-ion batteries, and check the bales of the power cables (black positive and blue negative). Connect power cables BATT1+ and BATT1- to the first Li-ion battery, connect power cables BATT2+ and BATT2- to the second Li-ion battery, and then close the plastic cover.



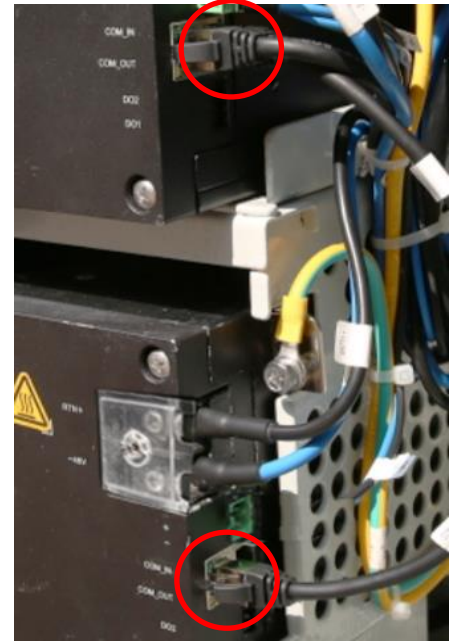


14 Installing Li-ion Batteries

- 5 Connect the reserved communications cable to the COM_IN port on the second Li-ion battery.



- 6 Connect one end of the communications cable in the accessories to the COM_IN port on the first Li-ion battery, and the other end to the COM_OUT port on the second Li-ion battery.



- 7 Install the build-out resistor on the COM_OUT port of the first Li-ion battery.





15 Checking the Cabinet Installation

NO	Requirement	Method
1	The cabinet components are installed correctly. The cabinet door shall have no distortion. The boards can be plugged and unplugged without difficulty.	Observe and try out
2	The cabinet is installed correctly without flake-off or damage.	Observe
3	The cabinet is installed reliably, satisfying the quakeproof requirements in the project file.	Observe
4	The cabinet installation site complies with the project file.	Observe
5	All cable apertures are sealed well, including apertures for power cables, ground cable, optical cable, and external subscriber cables.	Observe
6	The external positive lead and positive lead of battery are correctly and reliably connected to the power system.	Test with a multimeter
7	The protective cap on the wiring terminal of the battery is intact.	Observe
8	None of the cables has damage, fracture, or joint on the cable.	Observe
9	The power cable and ground cable adopt a whole segment of copper core. The cable has no joint in the middle or scratch on the skin.	Observe
10	The cross sectional area of the power cable and that of the ground cable comply with the project file, satisfying the power distribution requirements of the cabinet.	Observe
11	Optical fiber headers and board optical ports to be used are protected with protective caps. If necessary, clean them in compliance with Huawei regulations.	Observe
12	Cables outside the cabinet are buried underground if possible. If they are routed through the cabling rack, the lightning proof measures shall be adopted.	Observe
13	The cabinet is grounded properly and the ground resistance is smaller than 10 ohms.	Test with the ground resistance test equipment
14	An electrical leakage protective device is installed on the power supply side of the site. If such a device does not exist, it is recommended to install this device.	Observe
15	An all-polarity disconnection device is installed on the power supply side of the site. If such a device does not exist, it is recommended to install this device.	Observe
16	The inner cabinet is clean and neat, and free of redundant sundries. Ensure that the air intake vent and air exhaust vent of the device are not blocked by any object.	Observe



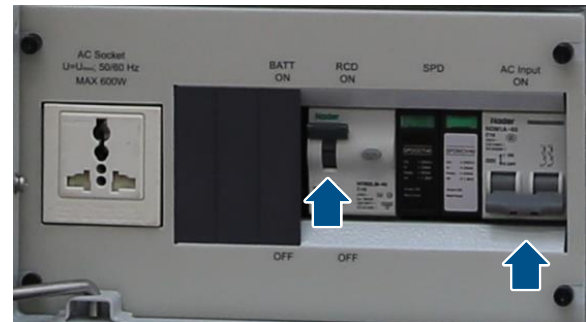
16 Powering On the System(AC-powered device)

⚠ CAUTION

- The cabinet must be powered on within seven days after installation.
- During the power-on, before and after turning on each of the MCBs for the first time, you need to use a multimeter to check the input and output voltages and ensure that the voltages are normal (AC ranges: 200 VAC to 240 VAC; DC range: -42 VDC to -58 VDC).
- After installing the cabinet and powering on the device, ensure that the battery switch is in the ON state. If the device needs to be powered off, you must first turn off the battery switch and then turn off the AC switch.

1 Use the multimeter to test the input voltage for the device.

2 Turn on the switches of the AC PDU.



3 Check whether the status of the power supply, fan, monitoring, and board running indicators of the AC main equipment is normal. The following figure shows the position and status of the running indicator.

Indicators on the MA5818 power board



Steady green

Steady green

Indicators on the MA5818 fan tray



Green: On for 1s and off for 1s repeatedly



17 Powering On the System(DC-powered device + ETP4860 power system)

⚠ CAUTION

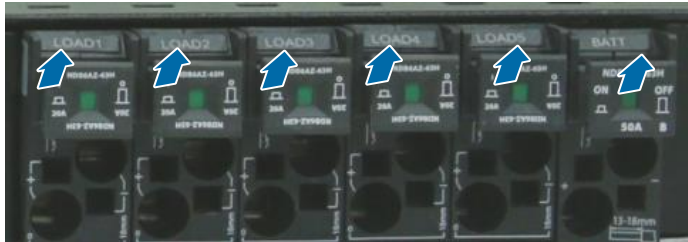
- The cabinet must be powered on within seven days after installation.
- During the power-on, before and after turning on each of the MCBs for the first time, you need to use a multimeter to check the input and output voltages and ensure that the voltages are normal (AC ranges: 200 VAC to 240 VAC; DC range: -42 VDC to -58 VDC).
- After installing the cabinet and powering on the device, ensure that the battery switch is in the ON state. If the device needs to be powered off, you must first turn off the battery switch and then turn off the AC switch.

1 Use the multimeter to test the input voltage for the device.

2 Turn on the switches of the AC PDU.

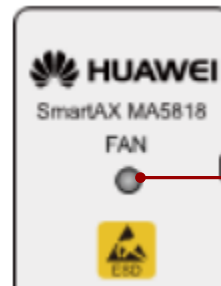


3 Turn on the switches of the ETP4860 power system.



4 Check whether the status of the power, fan, monitoring, and board indicators on the DC main device is normal. The following figure shows the position and status of the running indicator.

Indicators on the MA5818 fan tray



Green: ON for 1s and off for 1s repeatedly



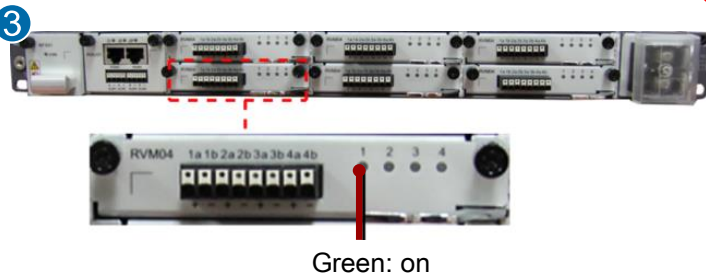
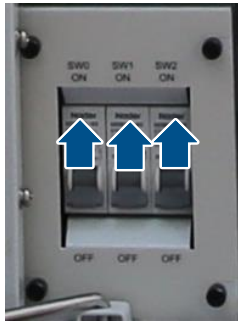
18 Powering On the System(DC-powered device + RFT-V RPS)

⚠ CAUTION

- The cabinet must be powered on within seven days after installation.
- During the power-on, before and after turning on each of the MCBs for the first time, you need to use a multimeter to check the input and output voltages and ensure that the voltages are normal (AC ranges: 200 VAC to 240 VAC; DC range: -42 VDC to -58 VDC).
- After installing the cabinet and powering on the device, ensure that the battery switch is in the ON state. If the device needs to be powered off, you must first turn off the battery switch and then turn off the AC switch.

1 Use the multimeter to test the input voltage for the device.

2 Turn on the switches of the AC PDU.



4 Check whether the status of the power, fan, monitoring, and board indicators on the DC main device is normal. The following figure shows the position and status of the running indicator.

Indicators on the MA5818 fan tray



Green: On for 1s and off for 1s repeatedly



19 Powering On the System(AC-powered device + Li-ion Batteries)

CAUTION

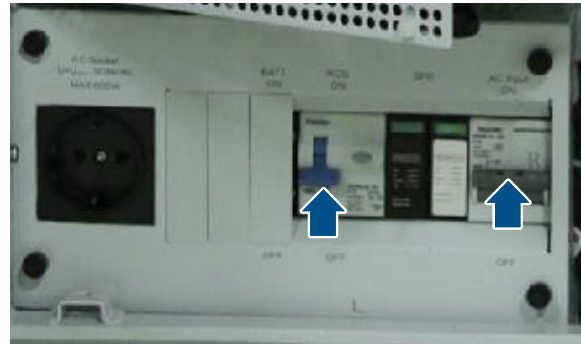
- The cabinet must be powered on within seven days after installation.
- During the power-on, before and after turning on each of the MCBs for the first time, you need to use a multimeter to check the input and output voltages and ensure that the voltages are normal (AC ranges: 200 VAC to 240 VAC; DC range: -42 VDC to -58 VDC).
- After installing the cabinet and powering on the device, ensure that the battery switch is in the ON state. If the device needs to be powered off, you must first turn off the battery switch and then turn off the AC switch.

NOTICE

When Huawei power monitoring module is connected to Li-ion batteries for the first time, the battery management parameters need to be changed to Li-ion battery management parameters, so the monitoring module automatically restarts.

1 Use the multimeter to test the input voltage for the device.

2 Turn on the switches of the AC PDU.



3 Check whether the status of the power supply, fan, monitoring, and board running indicators of the AC main equipment is normal. The following figure shows the position and status of the running indicator.

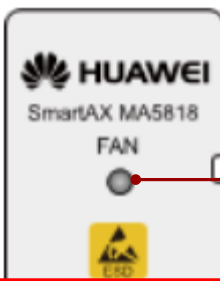
Indicators on the MA5818 power board



Steady green

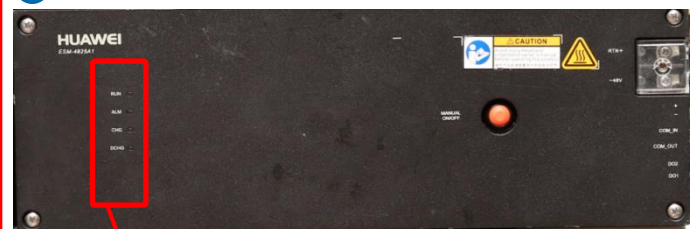
Steady green

Indicators on the MA5818 fan tray



Green: On for 1s and off for 1s repeatedly

4



RUN : Steady green



20 Powering On the System(DC-powered device + ETP4860 power system + Li-ion batteries)

CAUTION

- The cabinet must be powered on within seven days after installation.
- During the power-on, before and after turning on each of the MCBs for the first time, you need to use a multimeter to check the input and output voltages and ensure that the voltages are normal (AC ranges: 200 VAC to 240 VAC; DC range: -42 VDC to -58 VDC).
- After installing the cabinet and powering on the device, ensure that the battery switch is in the ON state. If the device needs to be powered off, you must first turn off the battery switch and then turn off the AC switch.

NOTICE

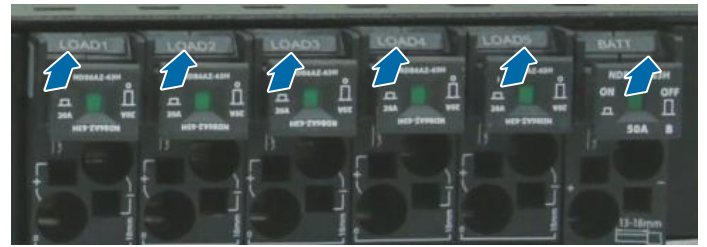
When Huawei power monitoring module is connected to Li-ion batteries for the first time, the battery management parameters need to be changed to Li-ion battery management parameters, so the monitoring module automatically restarts.

- 1 Use the multimeter to test the input voltage for the device.

- 2 Turn on the switches of the AC PDU.



- 3 Turn on the switches of the ETP4860 power system.



- 4 Check whether the status of the power, fan, monitoring, and board indicators on the DC main device is normal. The following figure shows the position and status of the running indicator.

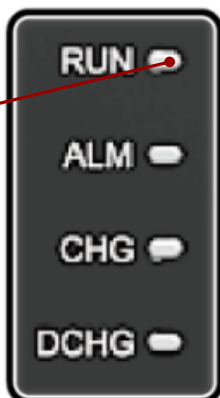
Indicators on the MA5818 fan tray



Green: On for 1s and off for 1s repeatedly

- 5

RUN: Steady green





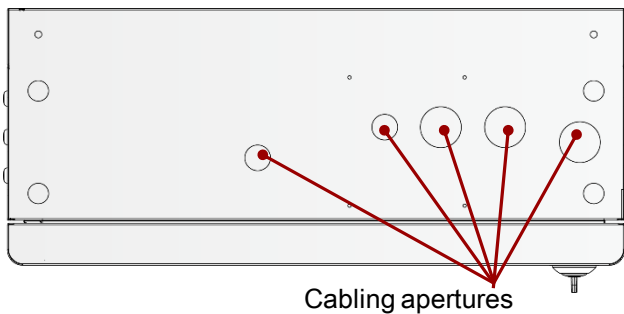
21 Sealing the Cabinet

NOTICE

- If the cabling apertures at the bottom of the cabinet or battery compartment are the sleeves, cover the sealing material (such as sealing mud) onto the cabling apertures at the bottom of the cabinet.
- After the engineering installation of the cabinet is completed and before the device is powered on, to avoid the condensation in the cabinet, you must remove the packaging bag from the desiccant (1 package) that is attached to the cabinet. Place the desiccant at the bottom of the device compartment. Remove the desiccant package only when the device is powered on next time.
- After installing the cabinet on a concrete pedestal, use silicon gel to seal the cabinet bottom properly.
- After When the cabinet is configured with the battery compartment, you must seal the apertures on the bottom of the device compartment. Otherwise, hydrogen generated in the battery compartment may cause the device compartment to explode.
- You are advised to install an external padlock on the cabinet door to improve the cabinet security.

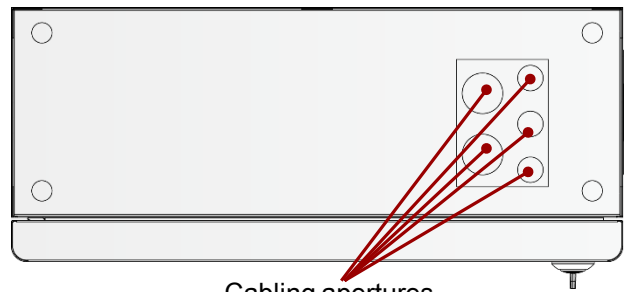
1 Check and seal the cabling apertures.

Cabinet bottom (top view)



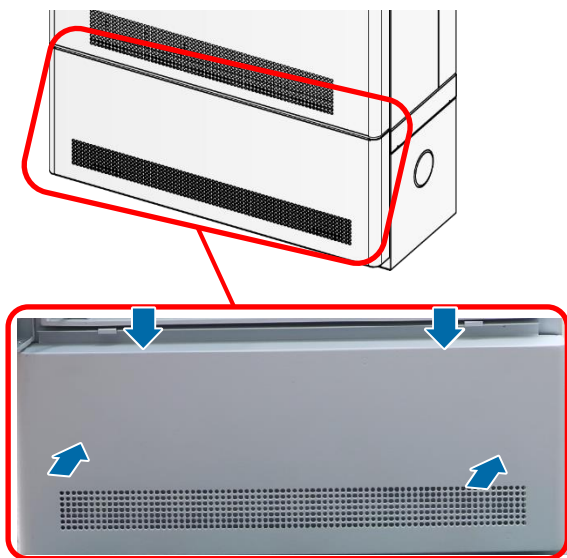
Cabling apertures

Battery compartment bottom (top view)

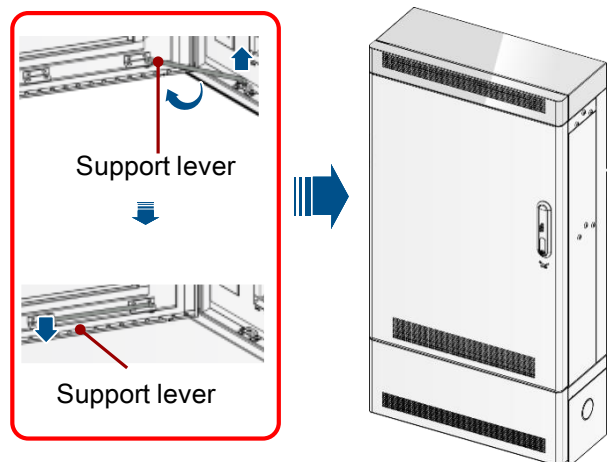


Cabling apertures

2 Close the cover of the battery compartment, and then turn the fasteners on the cover of the battery compartment downwards.



3 Close the door and keep the key.





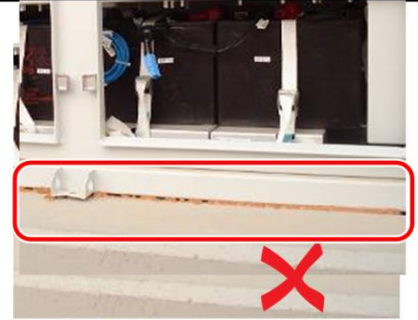
22 FAQs for Installation



Keep off electromagnetic interference.



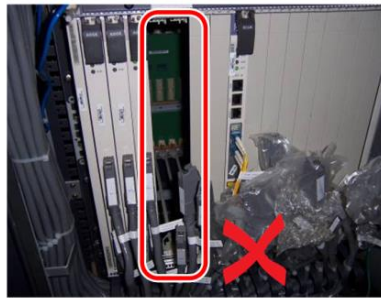
Cable apertures of the cabinet should be properly sealed to prevent dust or insects from entering the cabinet.



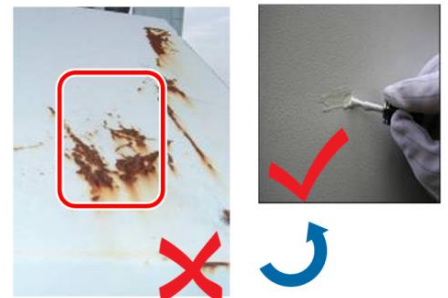
The bottom of the cabinet should be properly sealed.



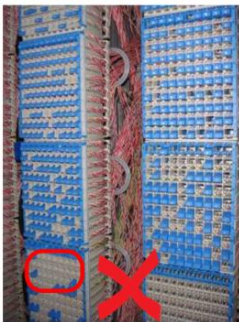
After fastening the cabinet, install the anti-theft parts and directly use the silica gel or cement to seal the anti-theft parts.



It is recommended that you install a filler panel in a slot without a board to ensure a better cooling effect and prevent short circuit.



Repaint the place that is collided.



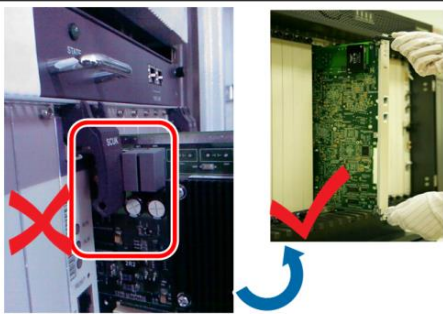
Each port of the cable side terminal block should be installed with a protective unit.



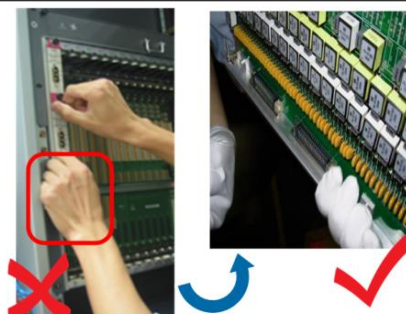
Ensure that parts are not piled up on the board.



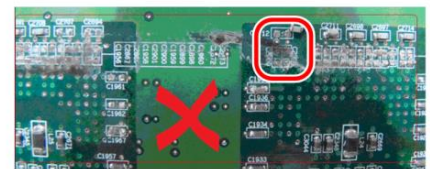
Use an ESD bag or board box to store and transport a board.



When installing and removing a board, align the board with the board tracks and prevent the board from colliding with the other parts.



Do not remove or install a board with bare hands.



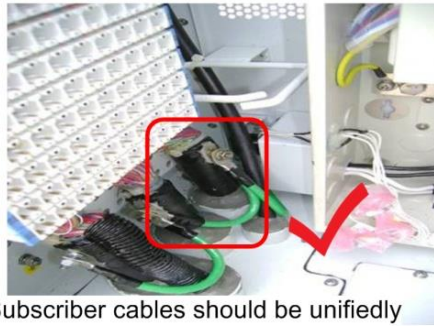
When installing and removing a board, use proper force to avoid any damage to the parts or any scratch on the PCB.



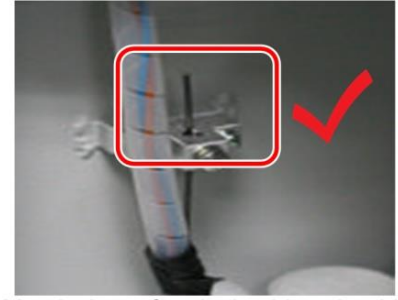
23 FAQs for Installation



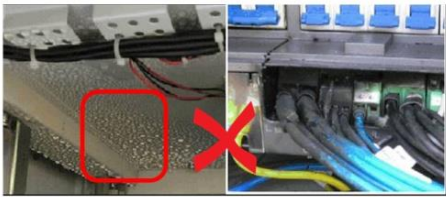
Use insulating materials to wrap the bare parts of power cables.



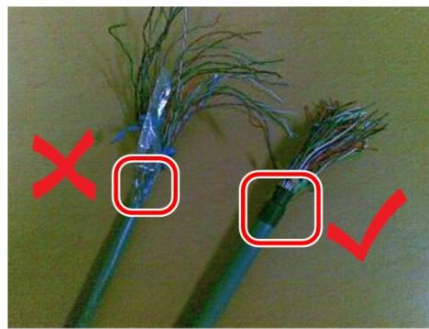
Subscriber cables should be unifiedly grounded.



Metal wires of optical cables should be grounded.



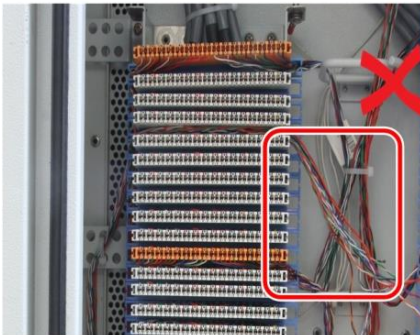
In the areas with a great temperature difference between the daytime and the night, if there is much condensation, wipe the condensation. Then, start a heating device to dry the inner cabinet before powering on the cabinet. Otherwise, short circuit may occur.



The subscriber cable part where the cable jacket is removed should be protected with a tube.



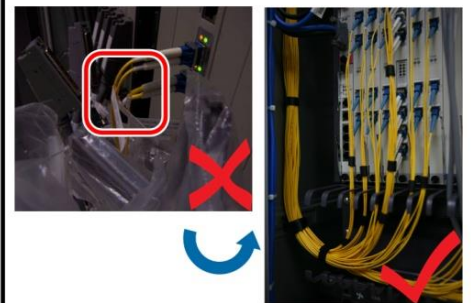
Do not distort cables.



Cables that are not used should be bundled.



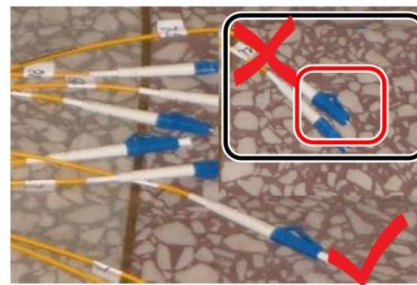
The connector of the subscriber cable that is not used should be protected with dustproof covers.



The bending radius of optical fibers should not be less than 40 mm.



Coil and protect the redundant optical fiber in the fiber management tray, other fiber management parts, or the place convenient for operation.



The ends of the optical fiber that is not used should be protected with dustproof caps.



Instead of directly being bundled by using cable ties, tail fibers should be bundled by using fiber binding straps.

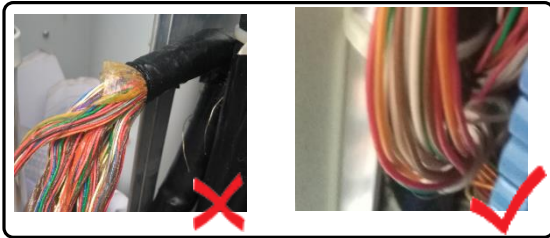


Appendix A: Preprocessing the External Subscriber Cables

- 1 After the external cables enter the cabinet, ensure that the stripped cables are wined with the adhesive tape to protect the filling materials inside cables against overflow.



- 2 After the external cables are stripped, ensure that the filling materials of all wires of all the scripted cables must be clean. No residues are allowed.



NOTICE

- It is recommended that you use the detergent specified by the cable manufacturer to clean filling materials. Do not use gasoline or unidentified detergent.
- It is recommended that you use the absorbent cotton or soft paper of good oil absorption to clean the cable.
- Ensure that every cable pairs are separately cleaned. Do not clean only the external-layer cable from multi-layer cables.

- 3 During cable construction, do not apply filling materials inside cables to the terminal block support or the other places of the cabinet.
- 4 Before installing the terminal block onto the support, clean the terminal block and support.

NOTICE

The filling material of the external cable in each area is different. Do not use the external cable that contains chemicals (such as toluene and organic acid) corrosive to PC material to connect the MDF terminal block.