UPS5000-S-1200 kVA Quick Guide

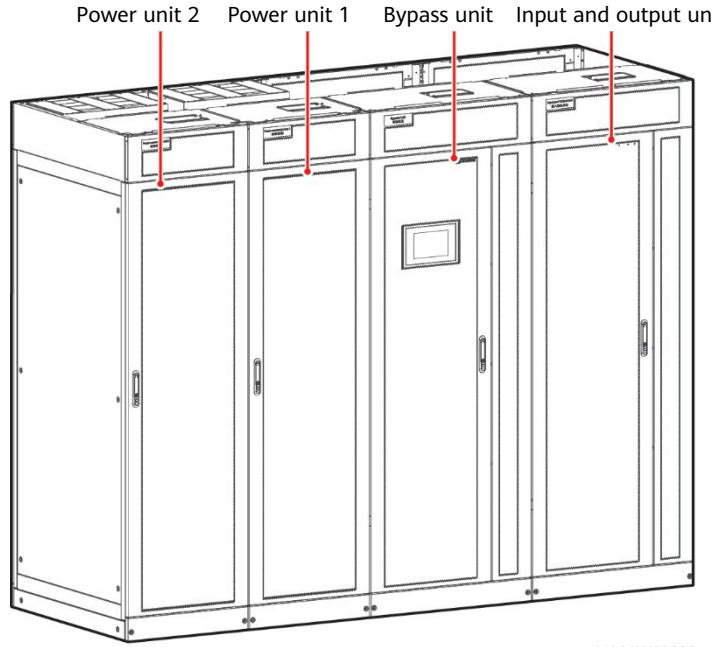
Issue: 08
Part Number: 31509942
Date: 2020-12-15

1 Overview

Model	UPS5000-S-1200KVA-FP
Weight	2360 kg
Dimensions (H x W x D)	2200 mm x 2800 mm x 1000 mm

NOTICE

1. Before installation, read the user manual carefully to get familiar with product information and safety precautions.
2. Use insulated tools during installation and operation.
3. Only engineers certified by Huawei or its agents are allowed to install, commission, and maintain the UPS. Otherwise, personal injury or equipment damage may occur, and the UPS faults caused are beyond the warranty scope of Huawei.



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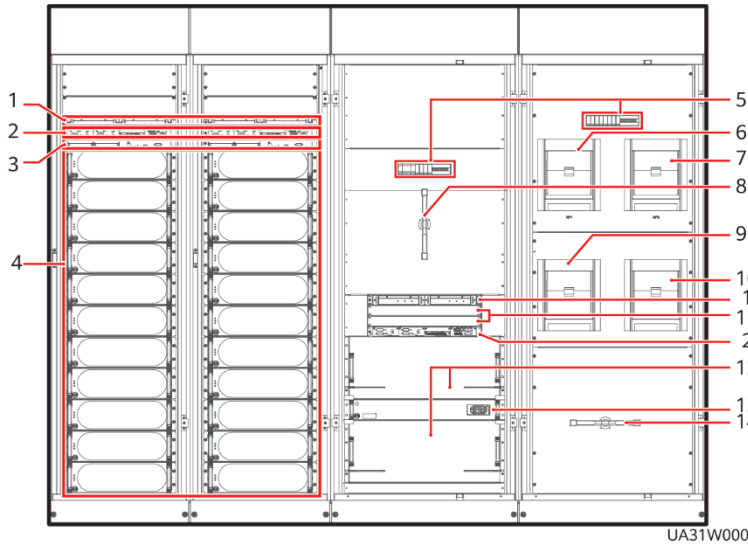

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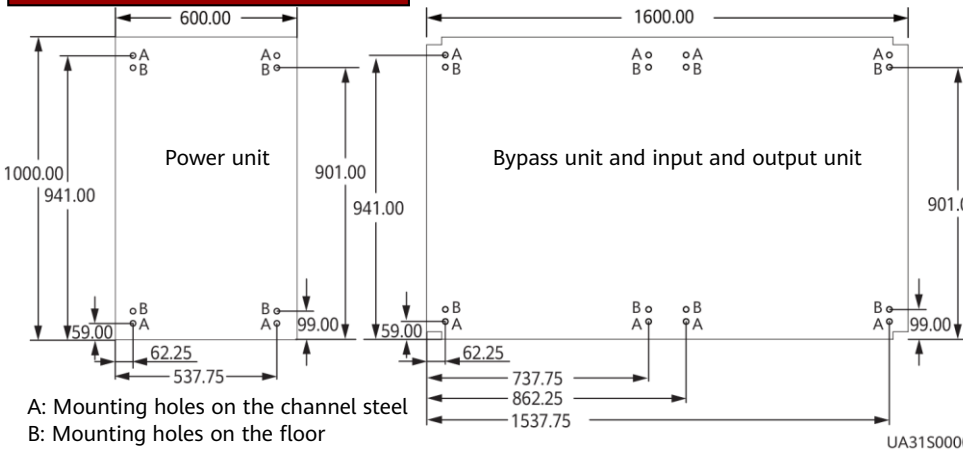
(1) Surge protective box
(2) Control module
(3) Monitor control module
(4) Power modules
(5) Surge protective device (SPD) and SPD switch
(6) Mains input circuit breaker of power unit 1 (Q1-1)
(7) Mains input circuit breaker of power unit 2 (Q1-2)
(8) Bypass input switch (Q2)
(9) Output circuit breaker of power unit 1 (Q5-1)
(10) Output circuit breaker of power unit 2 (Q5-2)
(11) Filler panels
(12) Bypass modules
(13) Bypass control module
(14) System output switch (Q5)

2 Installing the UPS

2.1 Determining the UPS Installation Position

The UPS can be installed on the channel steel or floor. Determine the mounting hole positions using a marking-off template (unit: mm), drill holes, and install expansion sleeves based on site requirements.

Dimensions of the Cabinet Holes



A: Mounting holes on the channel steel
B: Mounting holes on the floor

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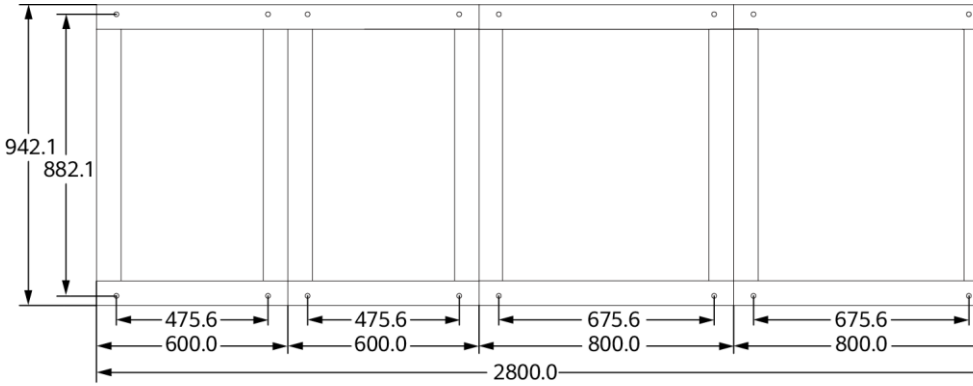
Recommended Channel Steel Dimensions



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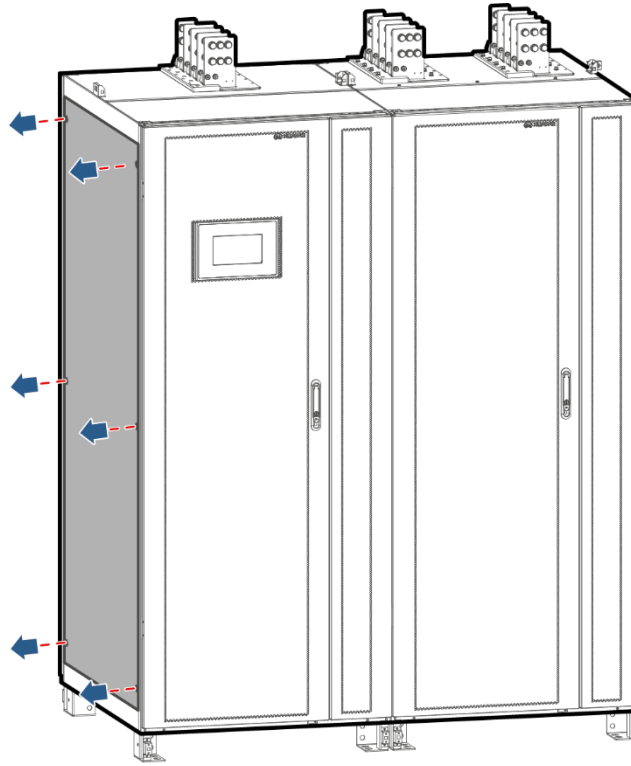
2.2 Combining the Power Units and Bypass Unit

1. Remove the side panel of the bypass unit.



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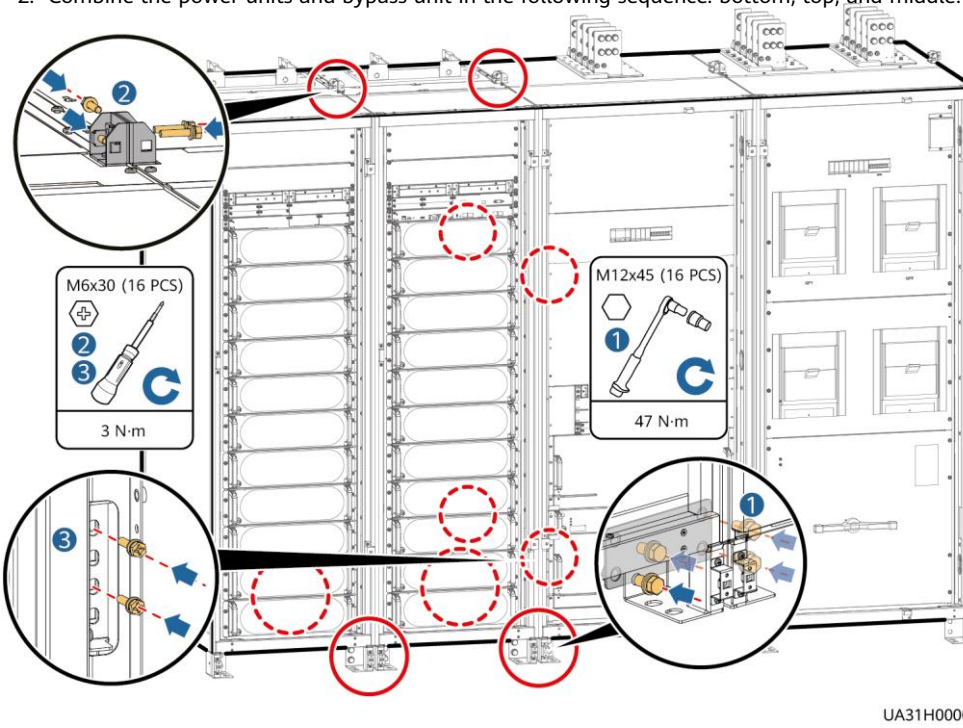
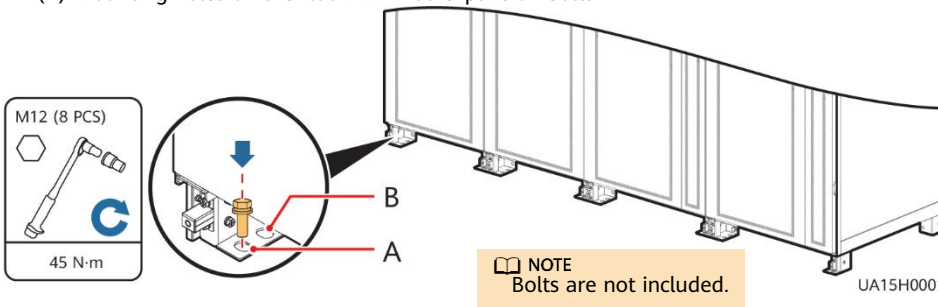
2. Combine the power units and bypass unit in the following sequence: bottom, top, and middle.

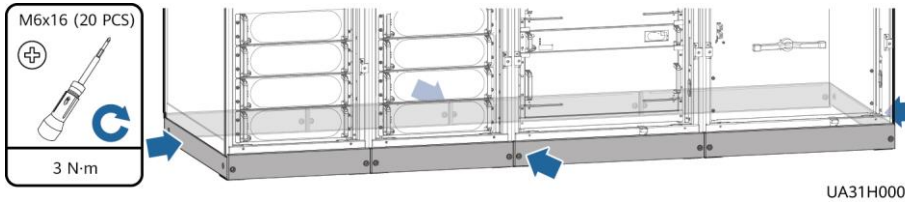


3. Install the side panels removed from the bypass unit to power unit 2.

4. Secure the UPS.
   (A) Mounting holes on the channel steel: M12x60 bolts
   (B) Mounting holes on the floor: M12x60 expansion bolts



5. Install anchor baffle plates.



2.3 Installing Busbars

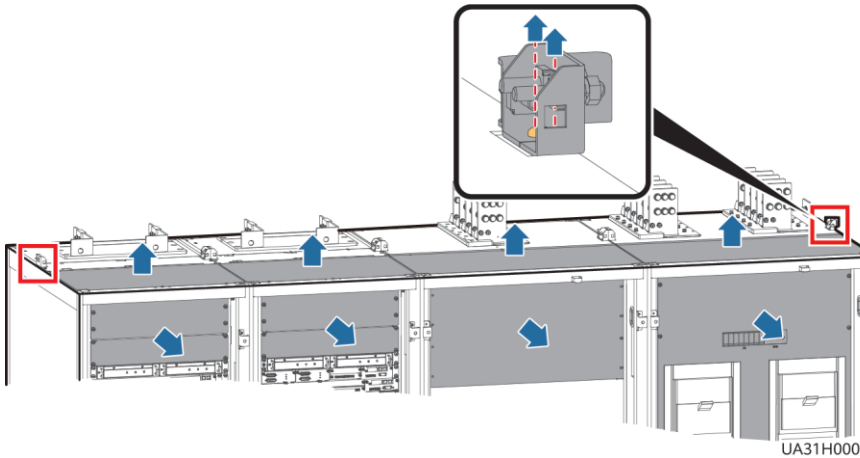
NOTICE

- Before handling a busbar, wear protective gloves to avoid getting injured by sharp edges.
- Move a busbar with caution to avoid scratching cabinets.
- Each busbar weighs about 50 kg. Be cautious to avoid injury when moving heavy objects.

Preparation: two scaling ladders that are more than one meter high
At least two persons are required to carry a busbar. At least two persons are required to hold the busbar on the top of the cabinet.

- When moving a busbar, hold both ends of the busbar component. It is recommended that the soft copper bar face downward.
- Do not move the busbar upward by holding the soft copper bar.

1. Remove the front panels and dustproof covers from the top of the cabinets, and remove the connecting kits at both ends of the top of the input and output unit and power unit 2.



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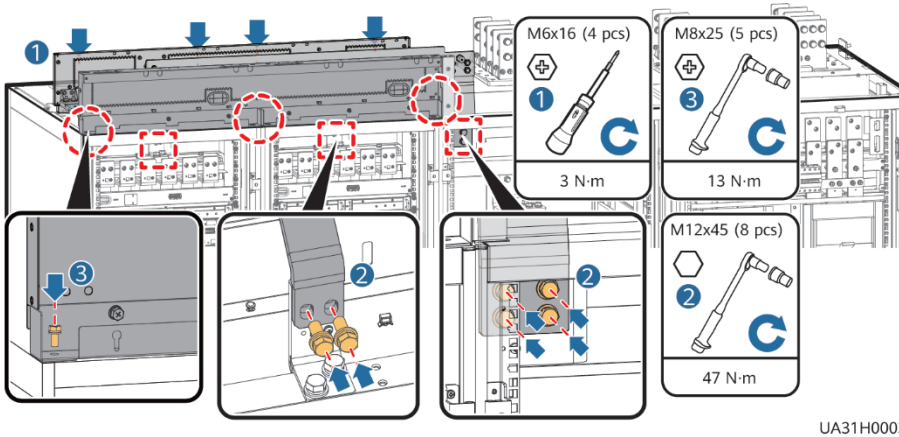
2. Install the U-shaped sealing plate component (numbered 01).



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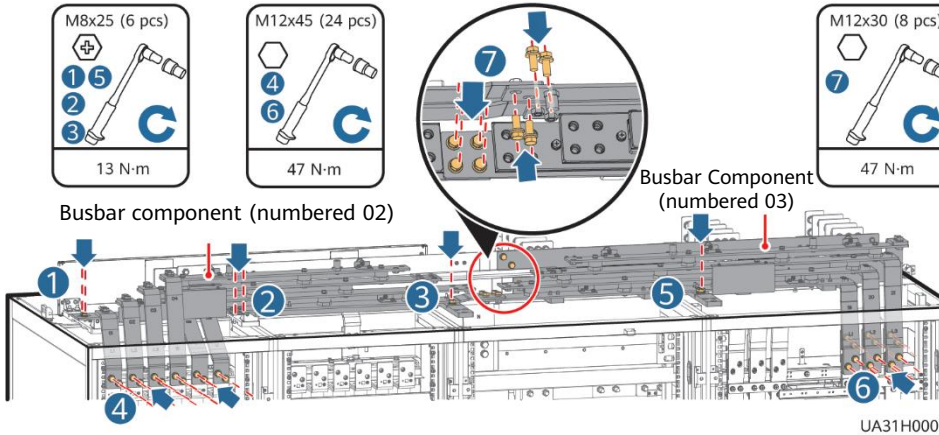
3. Install busbar components (numbered 02 and 03).

NOTE

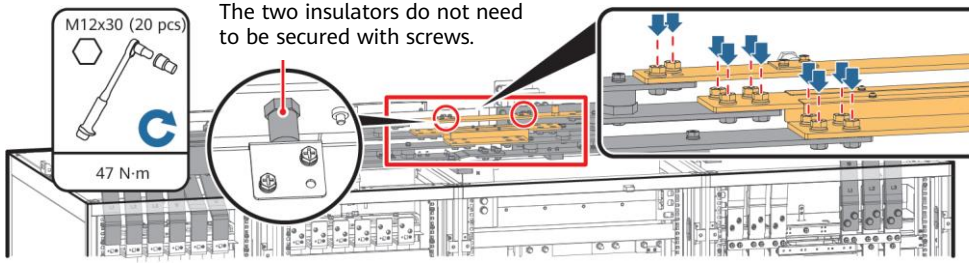
Before installation, remove the screws that are partially tightened from the busbar component.



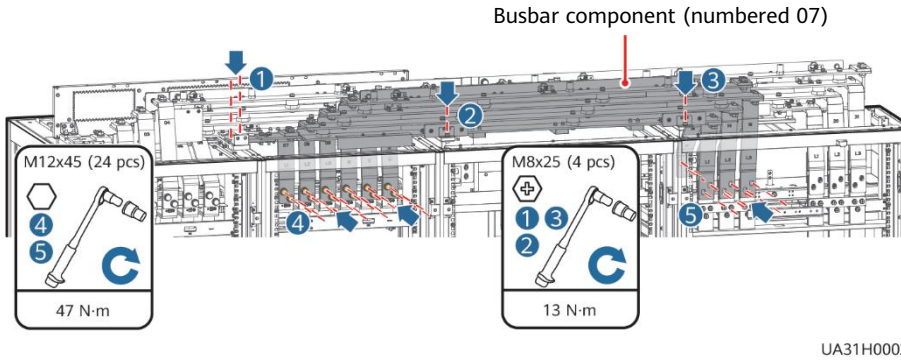
4. Use copper bars (numbered 04–06) to connect the busbar components (numbered 02 and 03).

NOTE

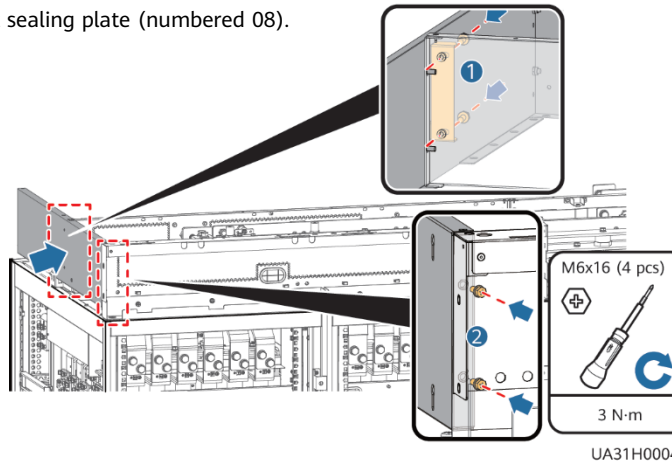
Before installation, remove the screws that are partially tightened from the busbar component.



5. Install the busbar component (numbered 07) and secure it to the cabinet.



6. Install the left sealing plate (numbered 08).



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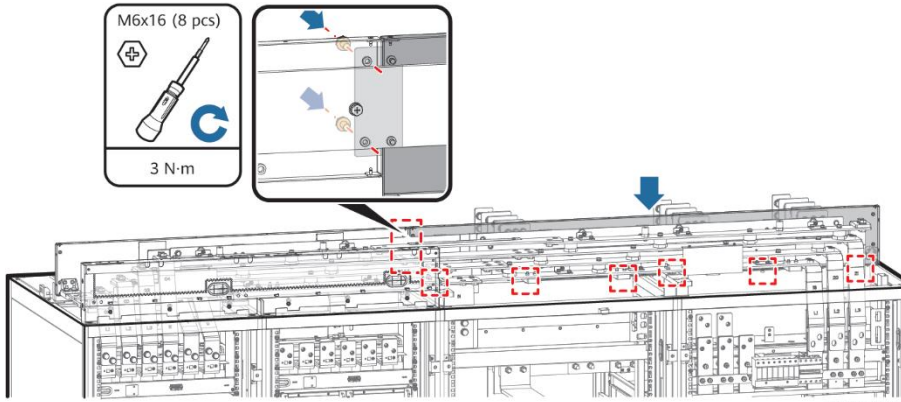
7. Install the side sealing plate (numbered 09) for the input and output unit.



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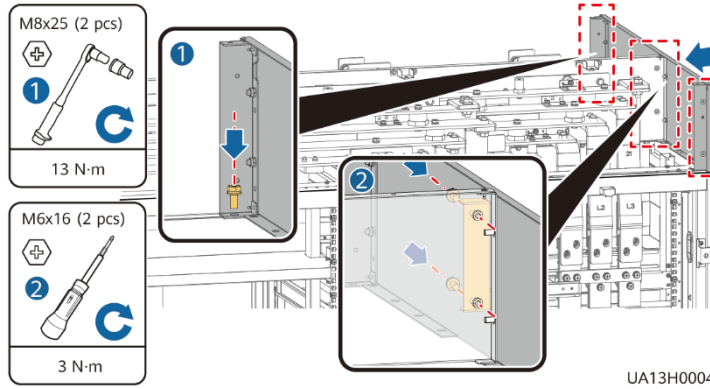
8. Install the right sealing plate (numbered 10).



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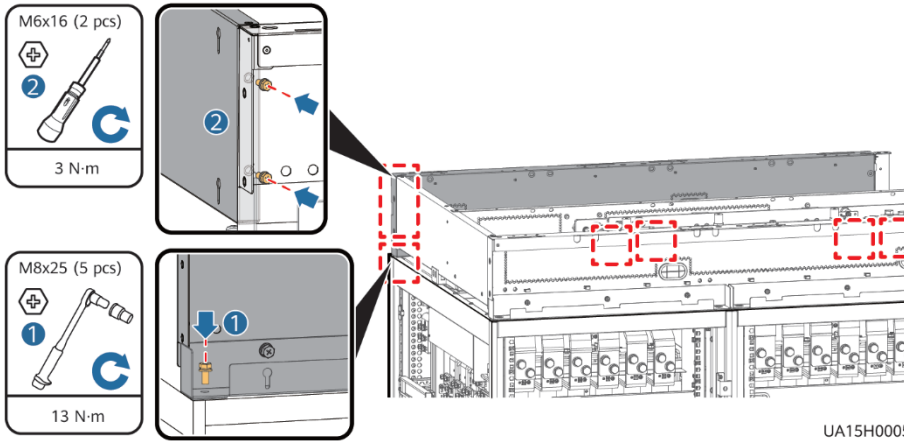
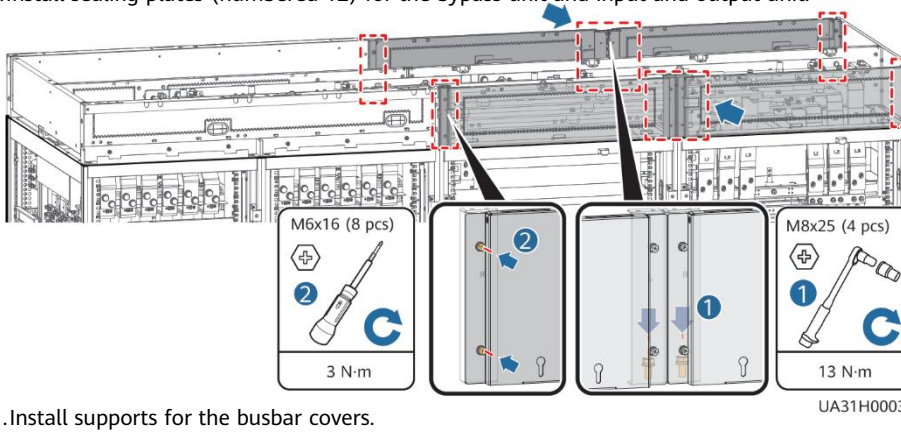
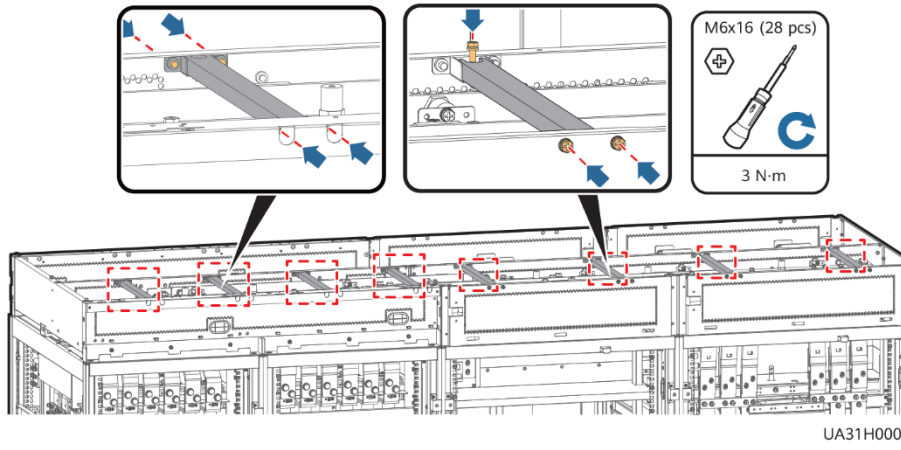
9. Install the rear sealing plate (numbered 11) for the power unit.



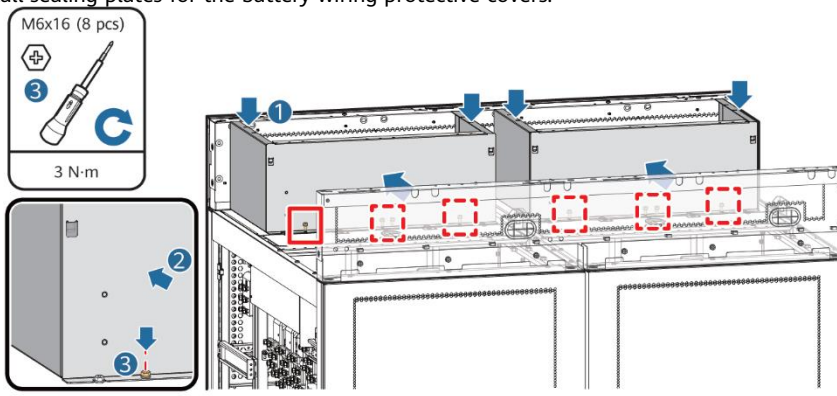
10. Install sealing plates (numbered 12) for the bypass unit and input and output unit.



11. Install supports for the busbar covers.



12. Install sealing plates for the battery wiring protective covers.



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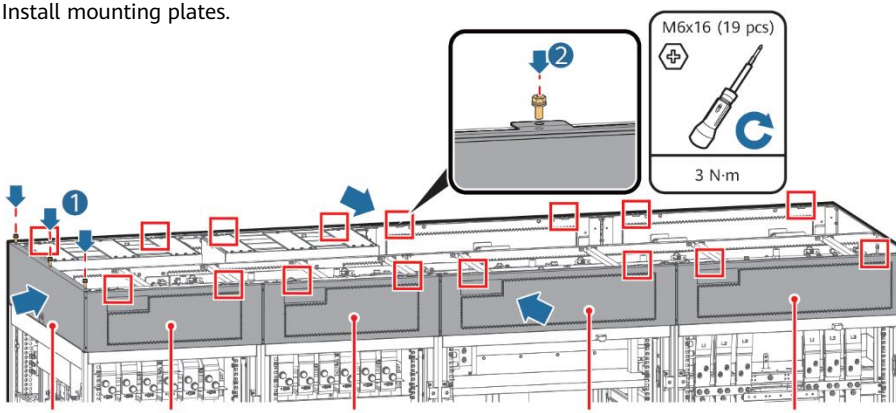
13. Install mounting plates.



Mounting plate (numbered 13) | Power unit 2 plate | Power unit 1 plate | Bypass unit plate | Input and output unit plate

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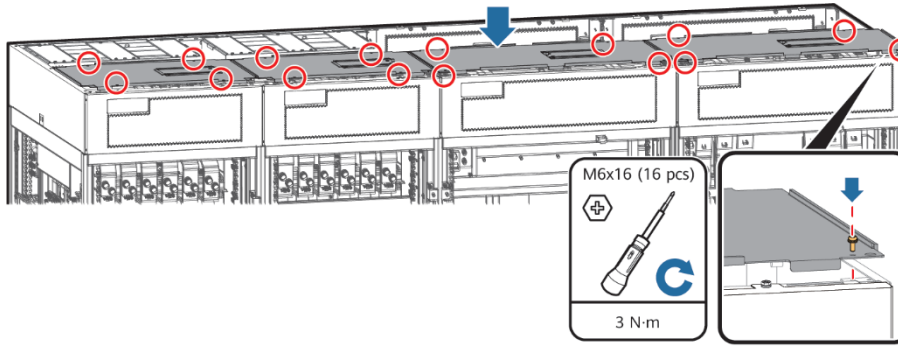
14. Install the top busbar covers.



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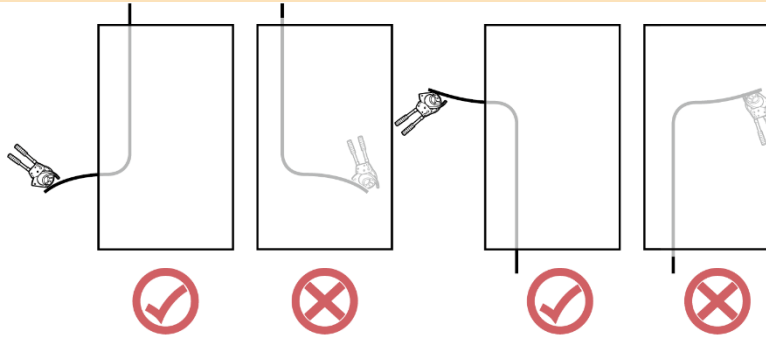
3 Installing Cables

3.1 UPS Cable Connection Reference

⚠ WARNING

- Prepare cables away from the cabinets to prevent scraps from falling inside. Cable scraps may ignite and cause personal injury or device damage.
- After cables have been installed, clean the cabinets in a timely manner. Keep the cabinets and surrounding environment clean and tidy.
- You need to prepare terminals onsite. The stripped length of the copper wire should be the same as that of the part of the terminal that covers the conductor.

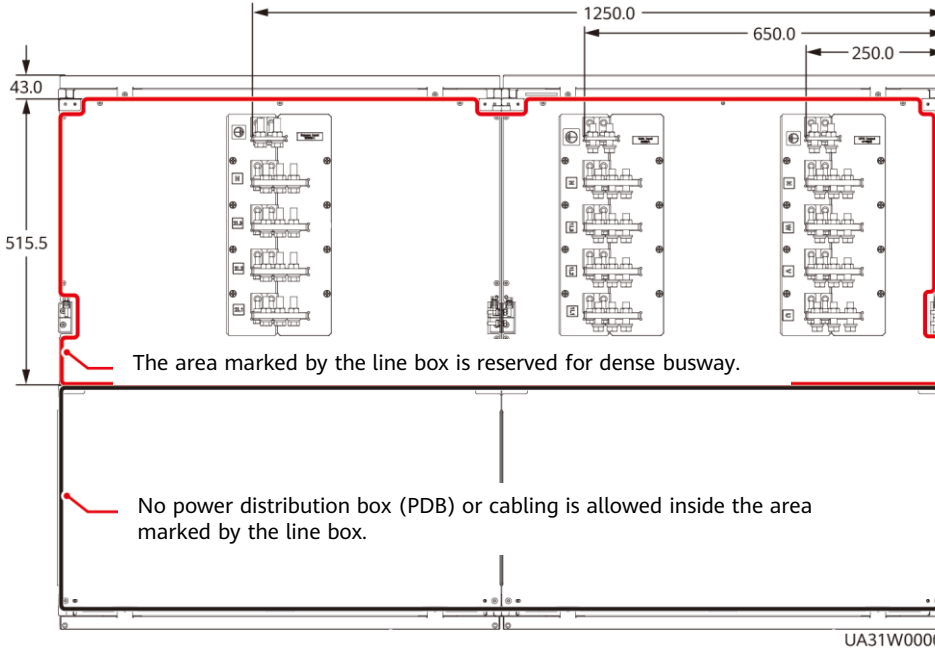


NOTE

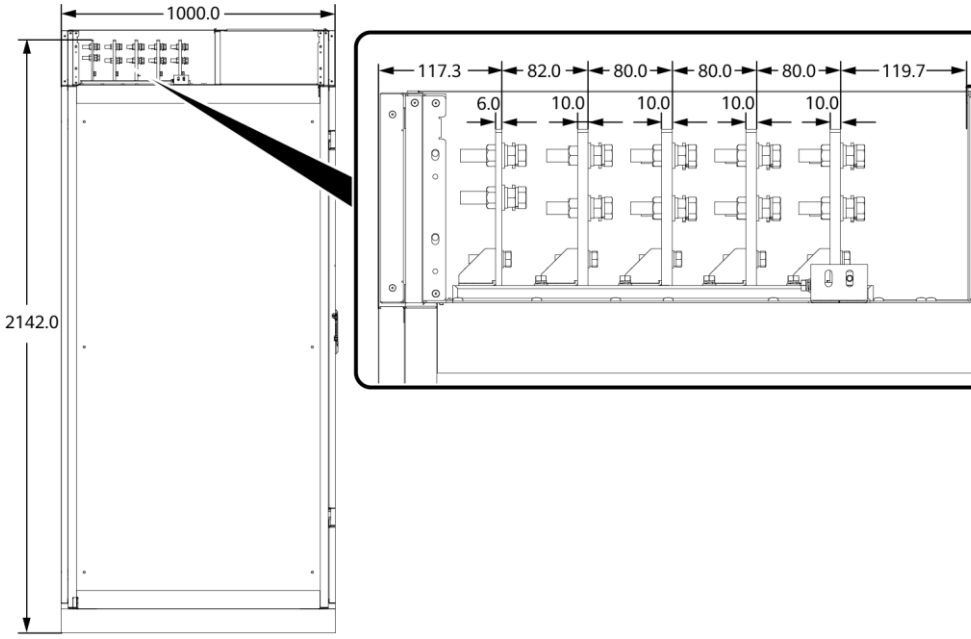
The cabling route is for reference only. Connect cables based on site requirements.

3.2 Installing UPS Cables

Distances Between the Top Copper Bars of the Bypass Unit and Input and Output Unit (unit: mm)



Distances Between Top Copper Bars (unit: mm)



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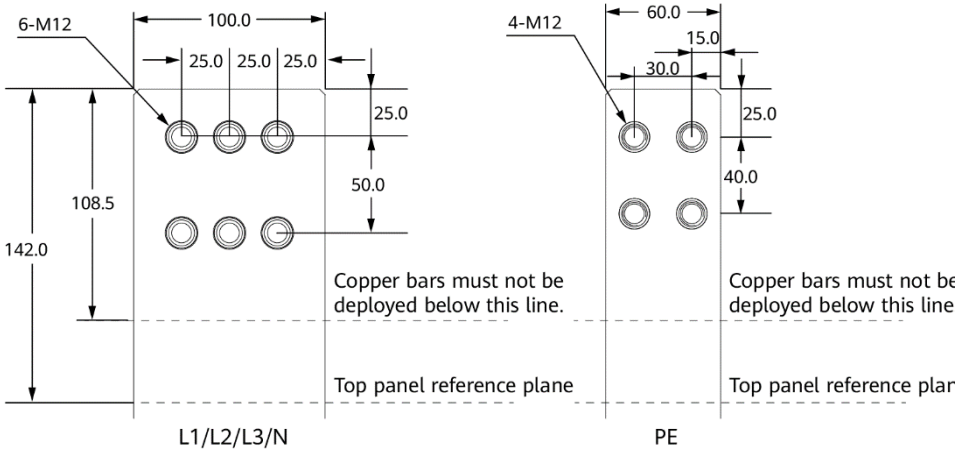
Copper Bar Specifications (unit: mm)



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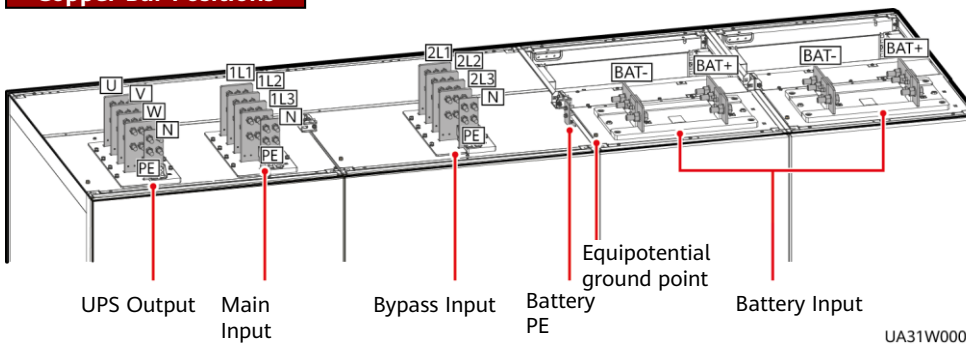
Copper Bar Positions



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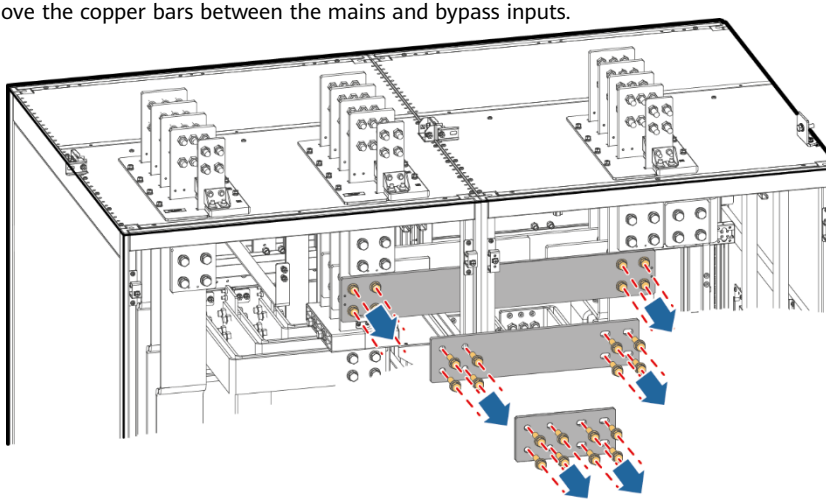
Port Description	Connection Method	Bolt Specifications	Bolt Length	Torque
Mains input	Crimped DT terminals	M12	35 mm	47 N·m
Bypass input	Crimped DT terminals	M12	35 mm	47 N·m
Battery input	Crimped DT terminals	M16	55 mm	120 N·m
Output	Crimped DT terminals	M12	35 mm	47 N·m
PE	Crimped DT terminals	M12	35 mm	47 N·m
Equipotential ground point	Crimped DT terminals	M6	N/A	4.5 N·m

1. Connect the equipotential ground point and the ground bar in the equipment room.
2. (Perform this step only when the mains and bypass inputs use different power sources.) Remove the copper bars between the mains and bypass inputs.



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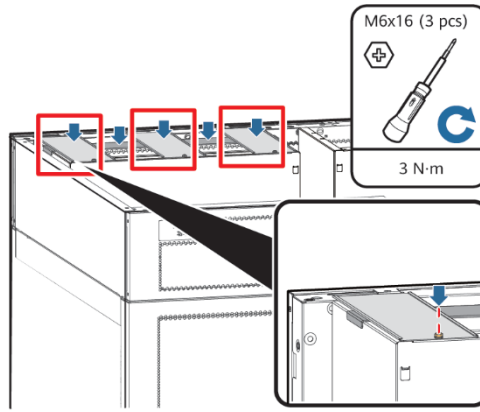
3. Connect the input and output busbars and battery cables based on the top copper bar position diagram.

4. Install supports and covers on the top of the protective covers for each power unit.



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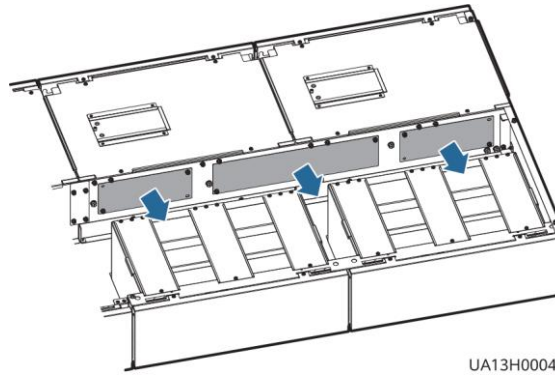
5. Before power-on, remove the protective covers from the top of the power units.



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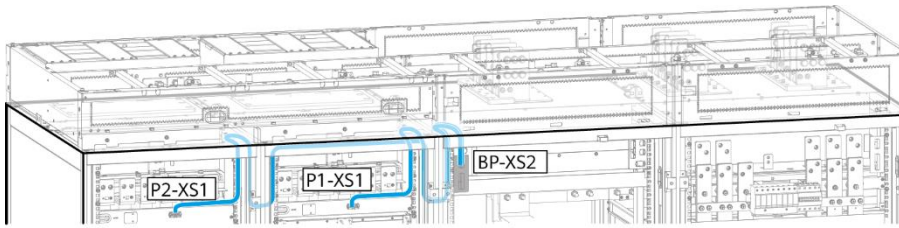
6. Connect the signal cables between the power units and the bypass unit.



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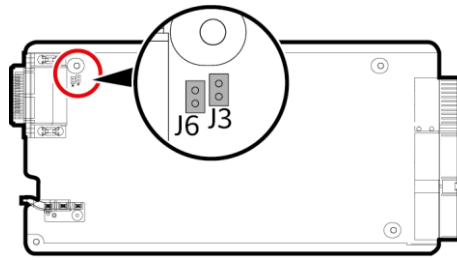
7. Only if the system is in 1+1 parallel configuration (skip this step if the system is a single UPS or dual-bus system), remove ECM 1 and ECM 2 from each control module of power unit 1, power unit 2, and bypass unit of each UPS, remove the J3 and J6 jumper caps from each ECM, and reinstall the ECMs in the control modules.



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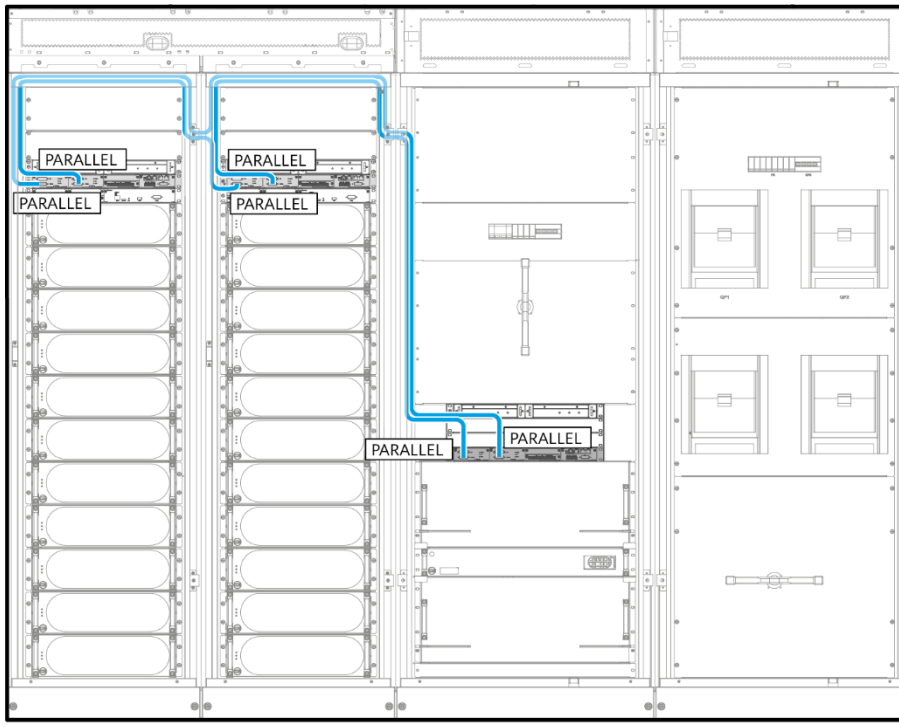
8. Connect the PARALLEL ports on the power units to form a loop by using parallel signal cables.



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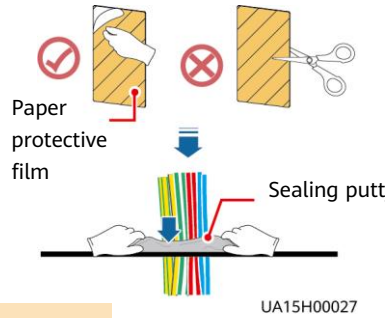
4 Verifying the Installation

1. Check that there is no foreign matter in the cabinets.
2. (Remove the paper protective film from the sealing putty.) After routing cables and verifying cable connections, seal the gap between cables and the cabinet using sealing putty.



NOTICE

Sealing putty must be used as a whole and the gap can be sealed only from the top.

3. After verifying the installation, reinstall all the covers.
4. Do not remove the dustproof cover before power-on to prevent dust from entering the UPS.

5 Powering On and Starting the UPS

NOTICE

1. Before powering on the UPS, ensure that the UPS has passed all check items in the *UPS5000 Commissioning and Acceptance Report* and Chapter 4.
2. Measure the voltage and frequency of the mains and bypass inputs of the UPS, or the voltage and frequency output from the external input power distribution cabinet (PDC) to the UPS. Ensure that the line voltage is in the range of 138–485 V AC and the frequency is in the range of 40–70 Hz.

5.1 Powering On the UPS

Turn on the upstream bypass and mains input switches

↓

Turn on SPD switch 1QFS and 2QFS.

↓

Turn on output circuit breaker Q5-1 and Q5-2.

↓

Turn on mains input circuit breaker Q1-1, Q1-2 and bypass input switch Q2.

↓

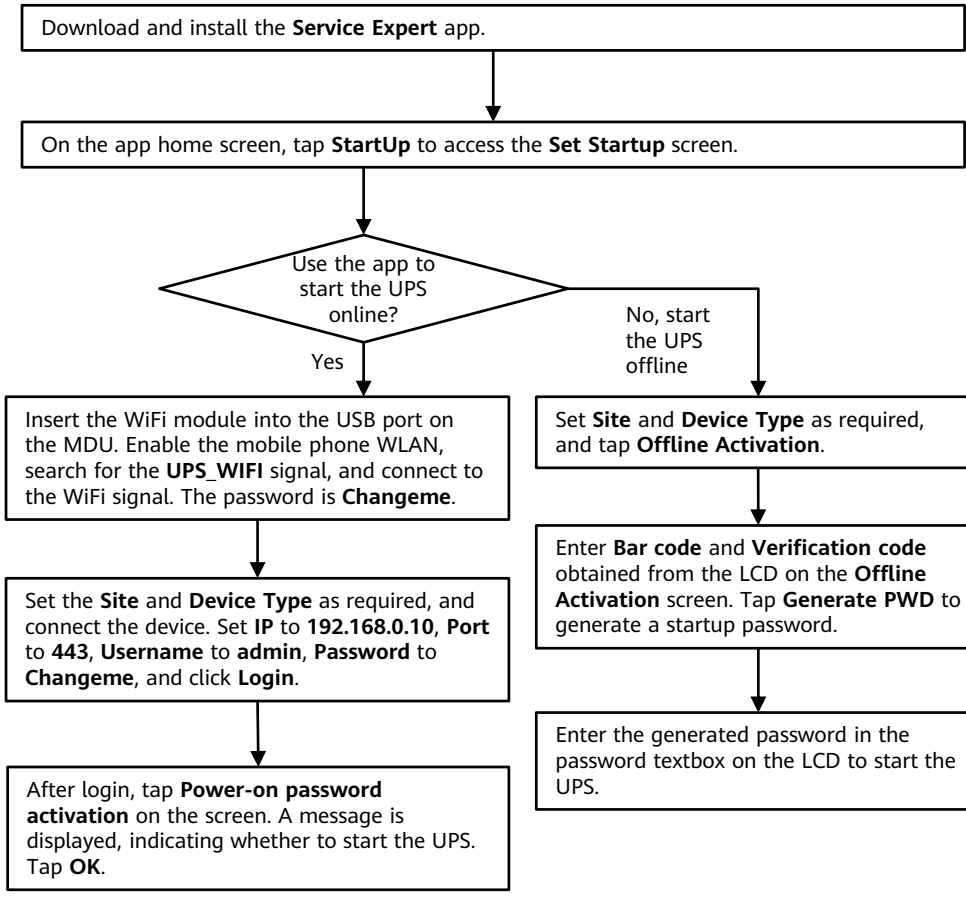
After the UPS is powered on, initialization begins. The monitoring display unit (MDU) displays the Huawei logo and an initialization progress bar.

5.2 Initial Startup

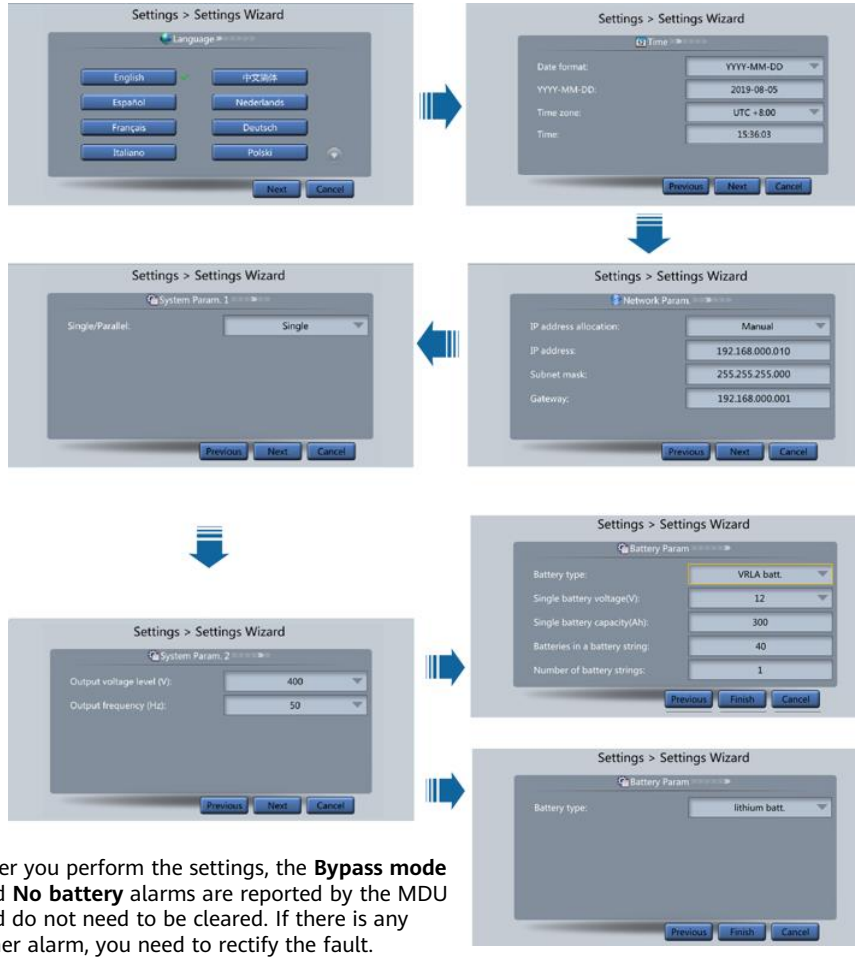
NOTICE

- If the UPS is powered on for the first time, you need to obtain the startup password from the **Service Expert** app. Skip this step if the UPS is not powered on for the first time.
- The **Service Expert** app can be downloaded from **Google Play Store** and can run on Android.

1. Obtain the startup password.



2. Set the language, time, date, network parameters, and system parameters on the **Settings Wizard** screen.



3. After you perform the settings, the **Bypass mode** and **No battery** alarms are reported by the MDU and do not need to be cleared. If there is any other alarm, you need to rectify the fault.
4. If the system has connected to the remote EPO switch, you need to choose **Monitoring** > **Param. Settings** > **System Settings** on the WebUI and set **EPO detection** to **Enable**.
5. View the system running status diagram on the MDU to check that the UPS is working in bypass mode.

5.3 Starting inverter

1. On the main menu, choose **Common Functions** and tap **Inv. ON**.
2. In the displayed login window, enter the user name and password, and tap .
3. In the displayed dialog box, tap **Yes** to start the inverter.

NOTE

To ensure system security, change the LCD and WebUI passwords after the first login.

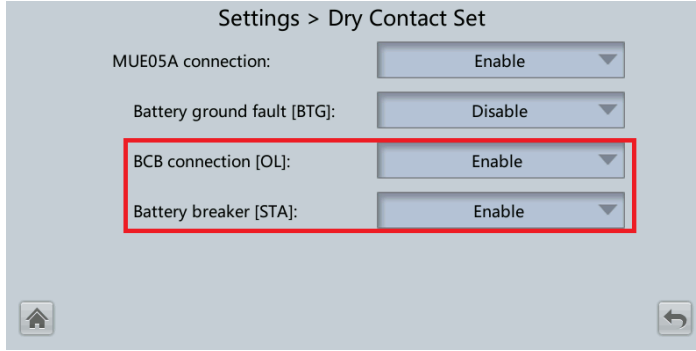
Default User	Preset Password	
admin (administrator)	LCD	000001
	Web	Changeme
operator (common user)	LCD	000001
	Web	Changeme
browser (browsing user)	Web	N/A

5.4 Powering On Loads

1. After the inverter starts, the UPS works in normal mode. The **Bypass mode** alarm disappears.
2. After confirming that the battery strings are properly connected, turn on the battery string input circuit breaker. If there are multiple battery strings, turn on the circuit breaker for each battery string and then the general circuit breaker between battery strings and the UPS. The **No battery** alarm disappears from the MDU.
3. Turn on the system output switch (Q5) to supply power to loads.

5.5 (Optional) Setting Parameters for the BCB Box

1. On the LCD of each power unit, choose **Power Unit N Info.** > **Settings** > **Dry Contacts Set**, set **MUE05A connection** to **Enable**, and set **BCB connection [OL]** and **Battery breaker [STA]** to **Enable**.



6 Shutting Down the UPS

NOTICE

After the inverter is shut down, if the bypass is normal, the UPS transfers to bypass mode; if the bypass is not normal, the UPS supplies no power. Before shutting down the UPS, ensure that all loads have shut down.

6.1 Shutting Down the Inverter to Transfer the UPS to Bypass Mode

- Shutting down the inverter on the LCD.
  On the system LCD, choose **Common Functions** > **Inv. OFF**. After confirmation, the inverter is shut down.

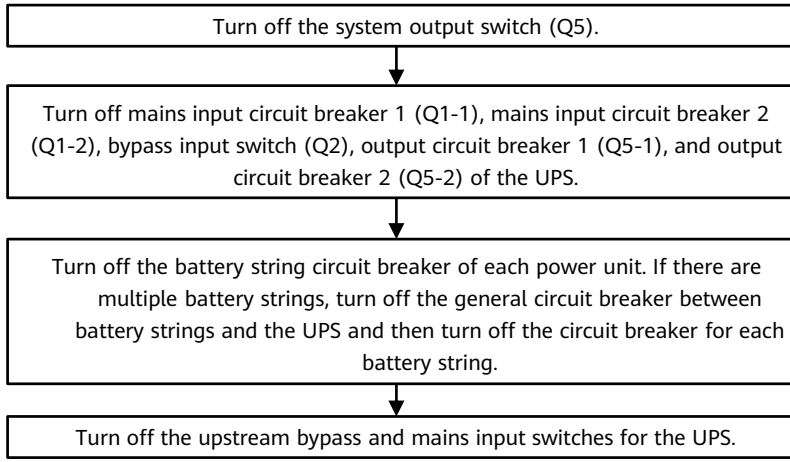
NOTE

You can also choose **System Info** > **Maintenance** > **Inv. OFF** to shut down the inverter.

- Shutting down the inverter on the WebUI.

  On the system WebUI, choose **Monitoring** > **Control**, and click **Inv. OFF**. After confirmation, the inverter is shut down.

6.2 Powering Off a Single UPS



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