UPS5000-E-(50 kVA-200 kVA) Quick Guide (50 kVA Power Modules)

Issue: 11
Part Number: 31507655
Date: 2022-12-30

1 Overview

UPS Model	Cabling Mode	Capacity	Weight (Full Configuration)	Dimensions (H x W x D)
UPS5000-E-200K-SM	Routed in and out from the top or bottom	50 kVA, 100 kVA, 150 kVA, 200 kVA	330 kg	2000 mm x 600 mm x 850 mm
UPS5000-E-200K-FM	Routed in and out from the top, routed in and out from the bottom (install a cable entry cabinet)		390 kg	

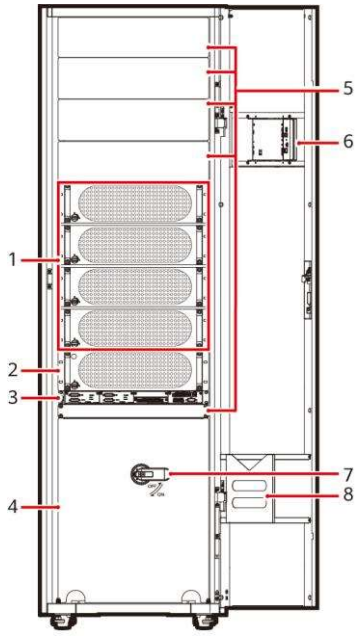
NOTE

The UPS5000-E-200K-SM is a standard configuration model. The UPS5000-E-200K-FM is a full configuration model. A UPS in standard configuration has no mains input switch, bypass input switch, or output switch.

NOTICE

1. Before installation, read the user manual carefully to get familiar with product information and safety precautions.
2. Use insulated tools when installing the equipment.
3. Only engineers certified by Huawei or its agent are allowed to install, commission, and maintain the UPS. Otherwise, personal injury or equipment damage may occur, and the resulting UPS faults are beyond the warranty scope of Huawei.
4. This document describes the installation procedure for a single UPS. For details about how to install a parallel system, contact Huawei technical support

UPS5000-E-200K-SM



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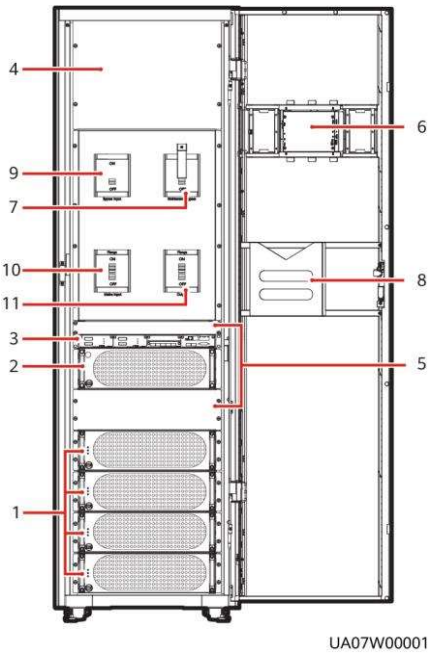
UPS5000-E-200K-FM



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(1) Power modules (2) Bypass module (3) Control module (CM)

(4) Power distribution subrack cover (5) Filler panel (6) Monitor display unit (MDU)

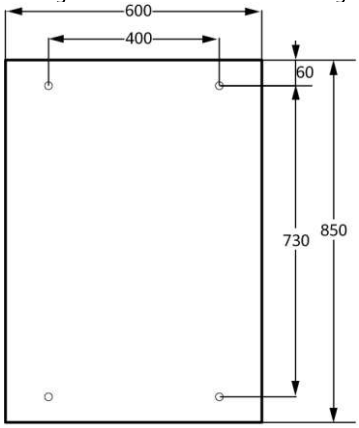
(7) Maintenance bypass switch (8) Folder (9) Bypass input switch

(10) Main input switch (11) Output switch

2 Installing the UPS

Secured Installation

1. Determine the position for installing the cabinet. Mark mounting holes based on the drawings. (unit: mm)



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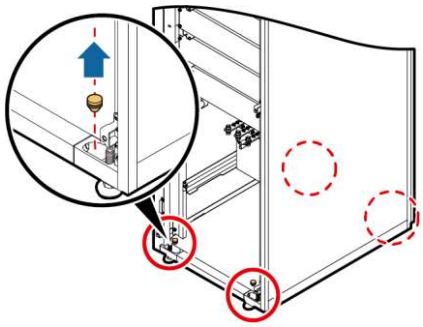
2. Use a hammer drill to drill four holes for installing expansion bolts and then install four expansion bolts in the holes. Remove the bolt, spring washer, and flat washer.
3. Slide the cabinet on its castors to the installation position.
4. (Optional) If the castors of the UPS need to be lifted from the ground, perform Step 1 to Step 2 in Non-Secured Installation.
5. Remove the rear panel of the cabinet, and then open the front door.
6. Remove the four rubber plugs from the bottom of the cabinet (two on the front and two at the back).



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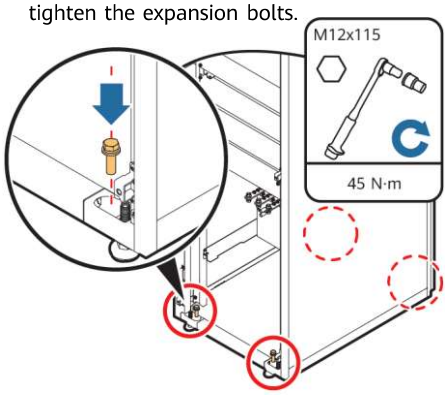
7. Insert four M12x115 expansion bolts into the expansion bolt holes in the floor, and tighten the expansion bolts.



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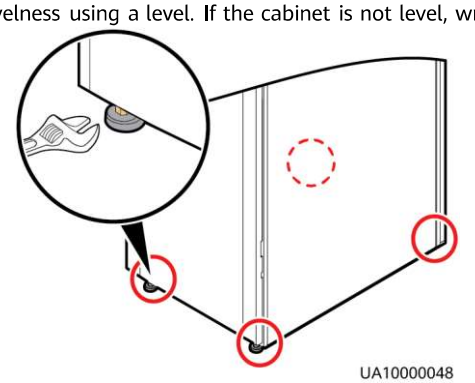
Non-Secured Installation

1. Adjust the four anchor bolts at the bottom of the UPS cabinet until all the four castors at the bottom hang in the air and the anchor bolts bear all of the cabinet weight.
2. Check the cabinet levelness using a level. If the cabinet is not level, wrench the anchor bolts.



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3 Connecting Cables

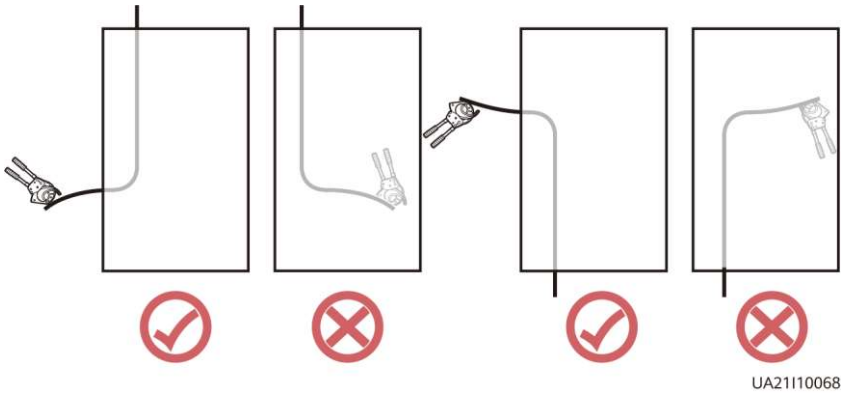
NOTE

1. This document describes cable routing by removing the top cover when there are two mains inputs.
2. In the case of single mains, you do not need to connect bypass input power cables and remove short-circuit copper bars.

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

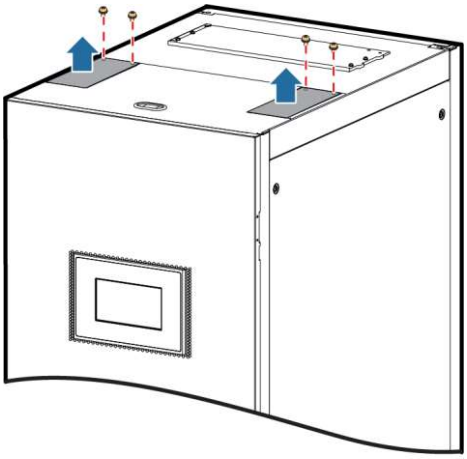
The cabling route is for reference only. Connect cables based on site requirements.

3.2 Connecting Cables

Connecting Cables to the UPS5000-E-200K-SM

Scenario 1: Routing Cables from the Top

1. Remove the small covers of the cabinet top.



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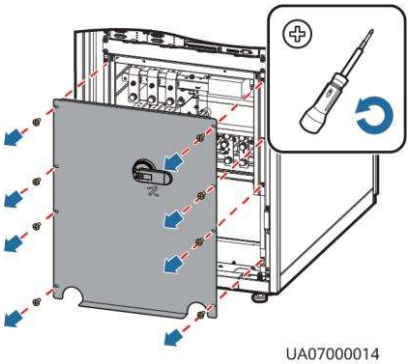
2. Remove the cover from the power distribution subrack.



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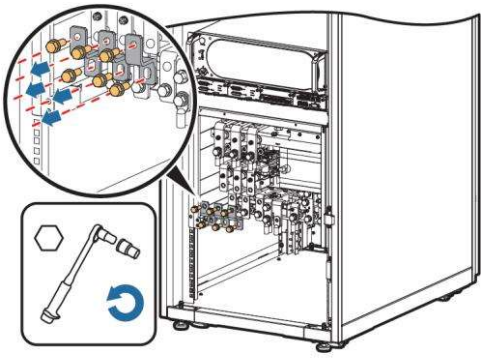
NOTE

The cover can be opened only if the maintenance bypass switch is OFF.

3. Remove the copper bars between mains input terminals and bypass input terminals.



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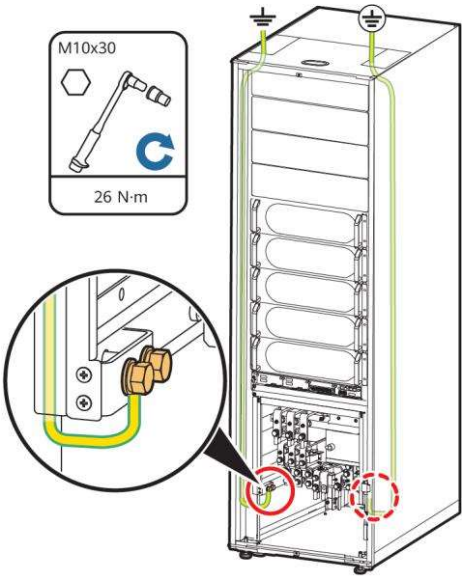
4. Connect ground cables to the UPS.



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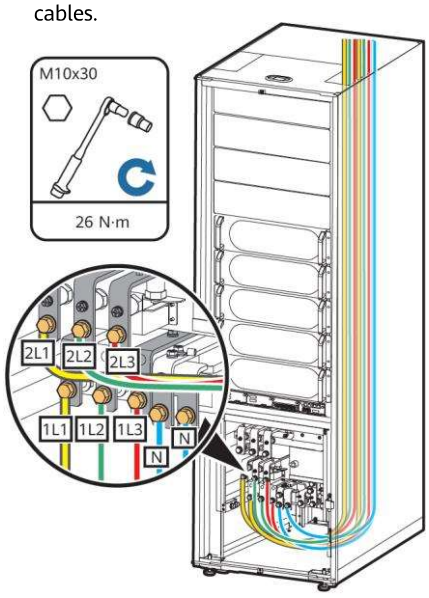
NOTE

- : Internal equipotential connection
- : Protection ground

5. Connect mains and bypass input power cables.



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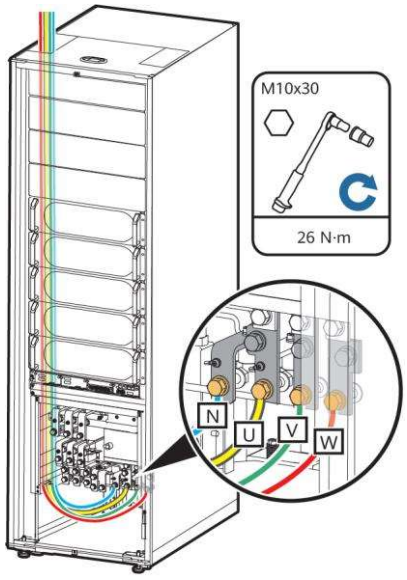
6. Connect output power cables.



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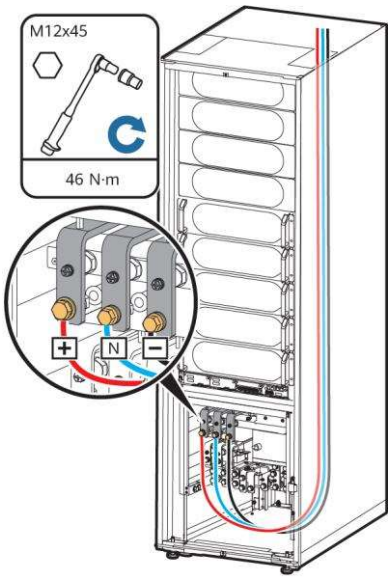
7. Connect battery cables.



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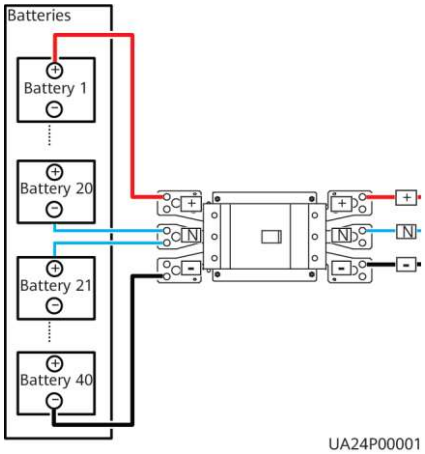
NOTE

Route a neutral wire from the middle of the positive and negative battery strings.
Take a battery string consisting of 40 batteries as an example. A neutral wire is routed from the middle of positive and negative battery strings, each consisting of 20 batteries.



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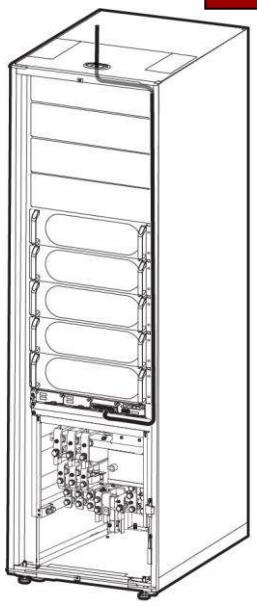
8. Connect the signal cable.

NOTE

The number and color of signal cables in the figure are for reference only. Signal cables can be routed along the left or right side of the cabinet. Route signal cables based on the actual situation.

NOTE

For the cable connection method for the TN-C system, see the user manual.



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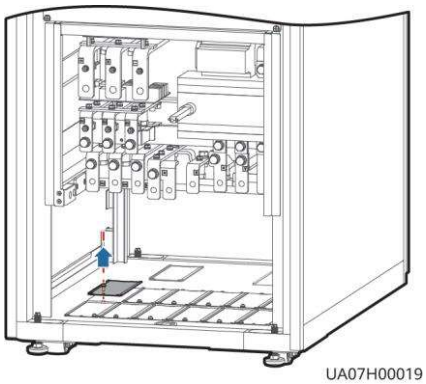
Scenario 2: Routing Cables from the Bottom

1. Remove the cover from the power distribution subrack.
2. Remove the copper bars between mains input terminals and bypass input terminals.
3. Remove small covers from the bottom based on site requirements.



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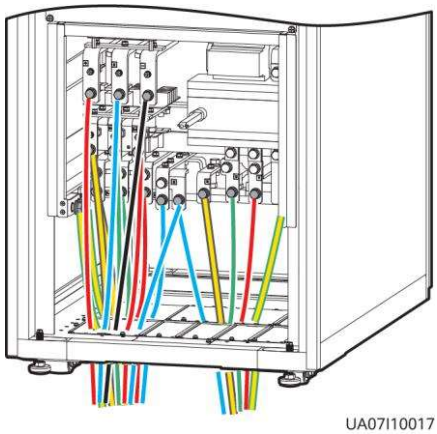
4. Connect power cables.



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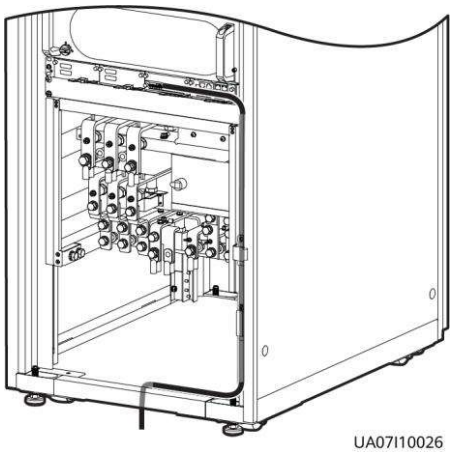
NOTE

For the screw specifications and torque used for connecting cables in a bottom cable routing scenario, refer to the top cable routing scenario. This section only shows the cable routes in the bottom cable routing scenario.

5. Connect the signal cable.



UA07I10026

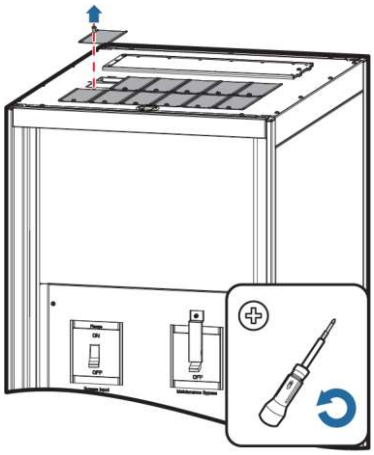
NOTE

The number and color of signal cables in the figure are for reference only. Signal cables can be routed along the left or right side of the cabinet. Route signal cables based on the actual situation.

Connecting Cables to the UPS5000-E-200K-FM

Scenario 1: Routing Cables from the Top

1. Remove a certain number of small covers from the top of the cabinet based on site conditions.



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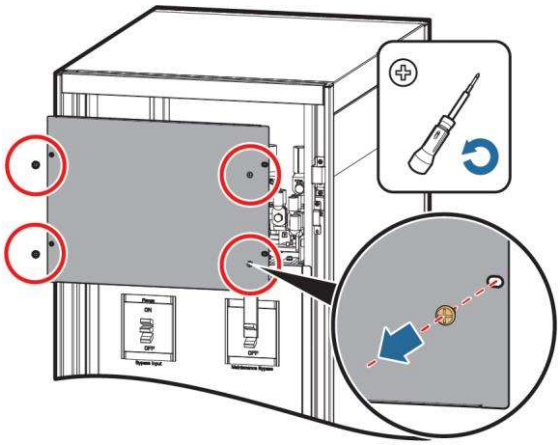
2. Remove the cover from the power distribution subrack.



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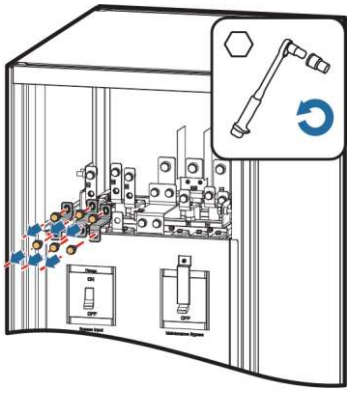
3. Remove the copper bars between mains input terminals and bypass input terminals.



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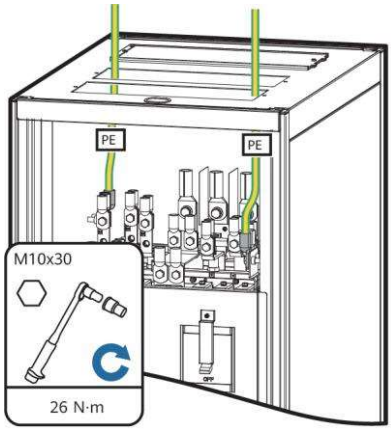
4. Connect ground cables to the UPS.



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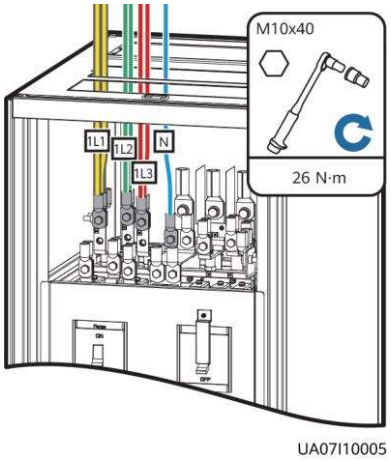
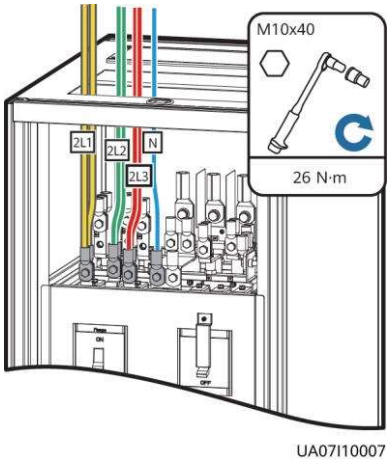
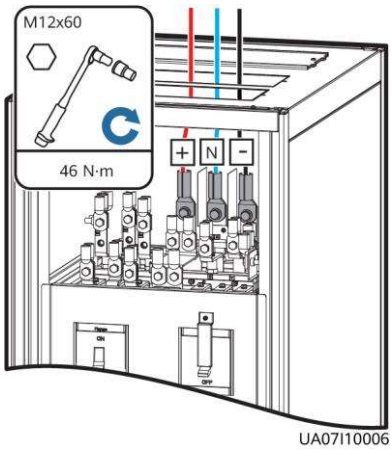
5. Connect mains input power cables.



6. Connect bypass input power cables.

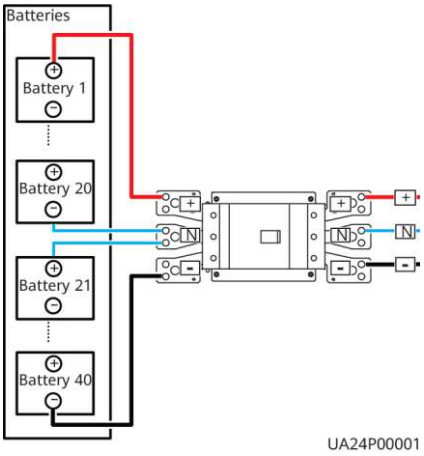


7. Connect battery cables.

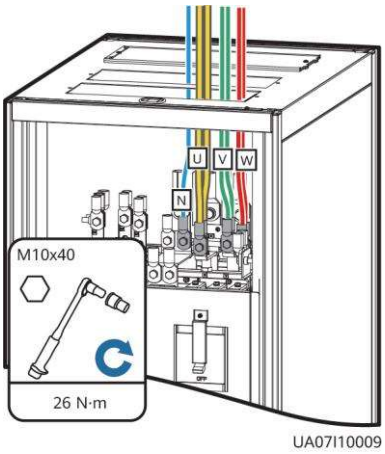


NOTE

Route a neutral wire from the middle of the positive and negative battery strings.
Take a battery string consisting of 40 batteries as an example. A neutral wire is routed from the middle of positive and negative battery strings, each consisting of 20 batteries.



8. Connect output power cables.



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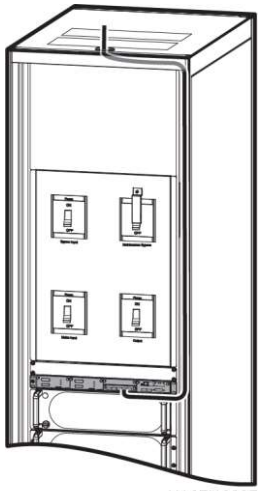
9. Connect the signal cable.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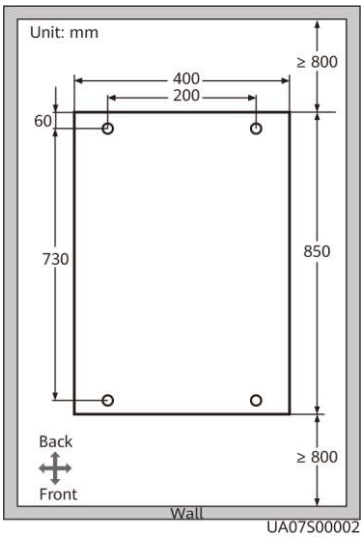
Scenario 2: Routing Cables from the Bottom

NOTICE

A cable entry cabinet needs to be installed when cables are routed from the bottom. This document uses the cable entry cabinet installed on the right of the UPS cabinet as an example.

1. (Optional) Determine the installation position for the cable entry cabinet, and draw mounting holes in the installation position based on drawings.



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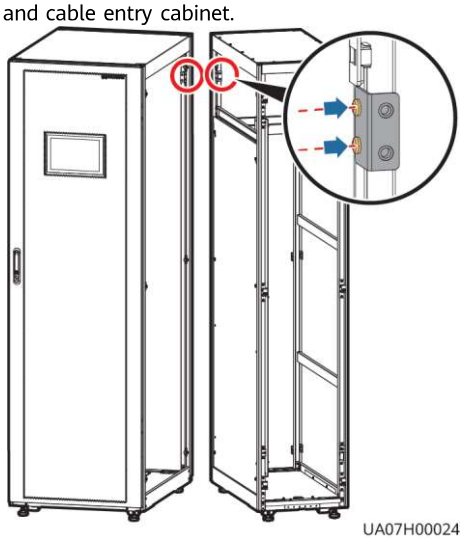
2. Remove the right and rear covers from the UPS cabinet, and remove the front and rear covers from the cable entry cabinet. Put away the removed screws and covers.
3. Adjust the anchor bolts of the cable entry cabinet to make it flush with the UPS cabinet.
4. Install equipotential plate mounting kits on the same horizontal plane of the UPS cabinet and cable entry cabinet.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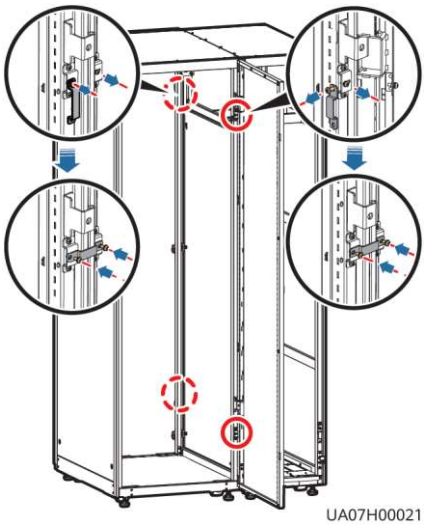
5. Place the cable entry cabinet on the right of the UPS cabinet.
6. Install the front and rear connecting kits.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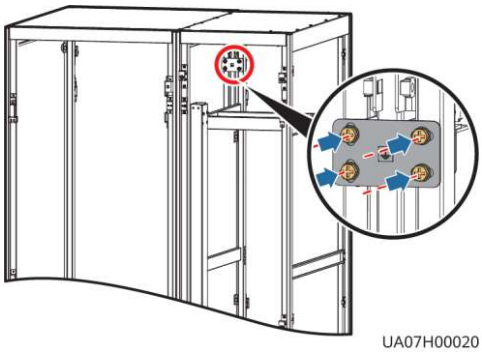
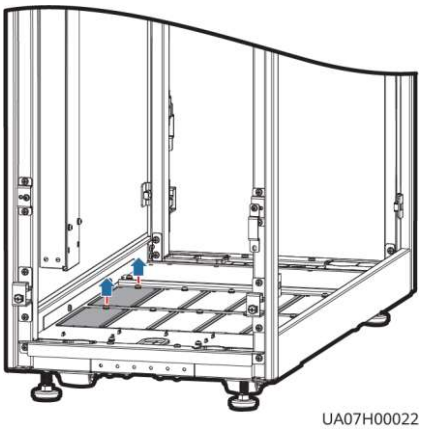
7. (Optional) Secure the cable entry cabinet to the ground.
8. Install an equipotential plate.


UA07H00020

9. Remove a certain number of small covers from the bottom of the cable entry cabinet based on site conditions.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10. Remove the signal cable trough cover from the cable entry cabinet.


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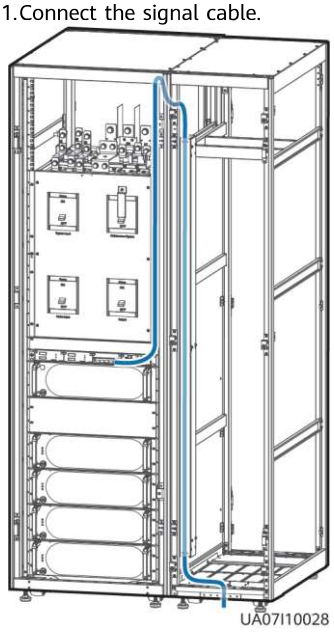
NOTE

If the cable entry cabinet is placed on the left of the UPS cabinet, remove the cable trough for signal cables and install it on the right of the cable entry cabinet.

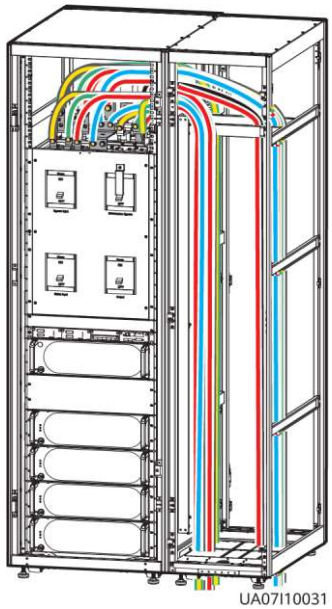
11.Connect the signal cable.



NOTE

- The figure shows the signal cable routing and is for reference only. Connect the cable based on the actual situation.
- For the cable connection method for the TN-C system, see the user manual.

12.Connect power cables.

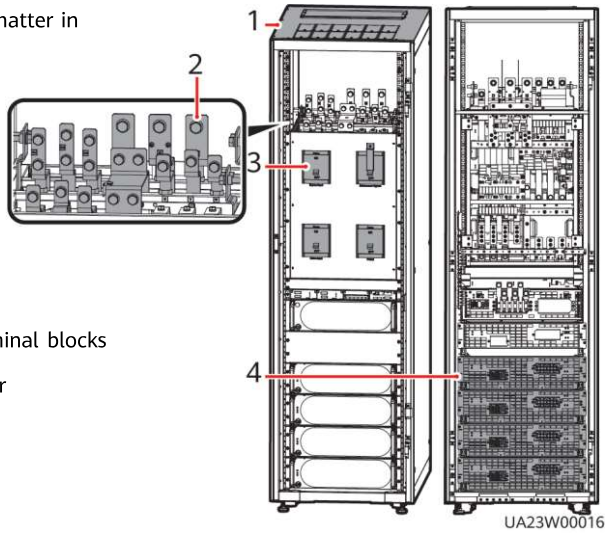


NOTE

For the screw specifications and torque used for connecting cables in a bottom cable routing scenario, refer to the top cable routing scenario. This section only shows the cable routes in the bottom cable routing scenario.

4 Verifying the Installation

1. Check that there is no foreign matter in the cabinet.



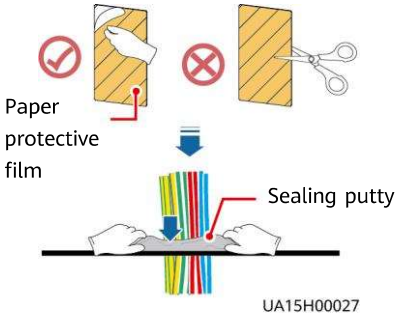
(1) Cabinet top (2) Wiring terminal blocks

(3) Switches (4) Cabinet rear

2. After verifying the installation, reinstall all the covers.
3. (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.



4. Do not remove the dustproof cover before power-on to prevent dust inside 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 UPS upstream input switch. The line voltage range is 138–485 V AC, and the frequency range is 40–70 Hz.

5.1 Powering On the UPS

Close the upstream bypass and mains input switches.

↓

(Full configuration model) Close the UPS bypass input switch, output switch, and mains input witch.

↓

After the UPS is powered on, initialization begins. The MDU displays the Huawei logo and an initialization progress bar.

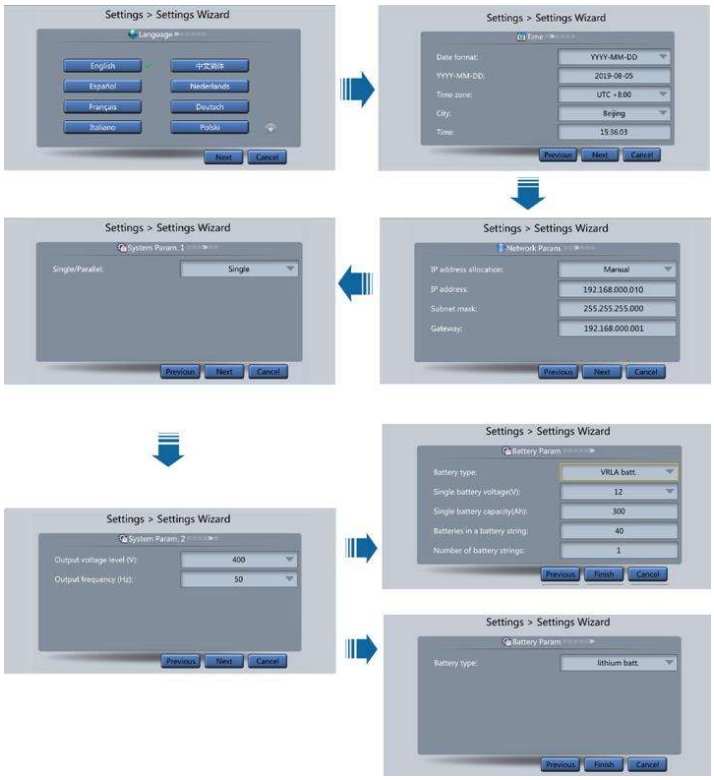
5.2 Initial Startup

1. Obtain the startup password through the app. After the application is approved, enter the password on the service authorization screen of the device to complete device authorization.

NOTICE

Technical support engineers can obtain the service authorization code through the app. For details, see the *Data Center Facility Deployment Guide*.

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** > **UPS System** > **Running Parameter** > **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.

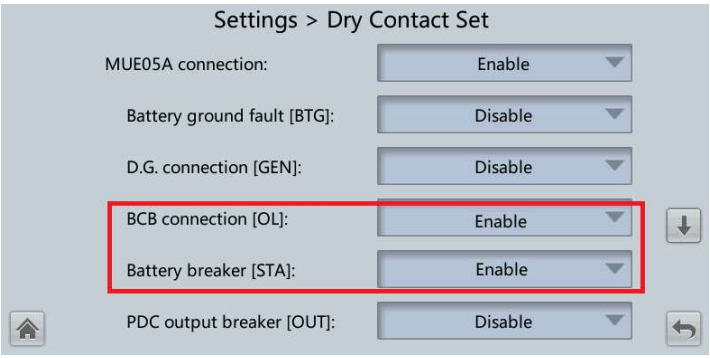
System User	LCD Preset Password	WebUI Preset Password
admin (system administrator)	000001	Changeme
operator (common user)	000001	Changeme

5.4 Powering On Loads

1. After the inverter starts, the UPS works in normal mode. The **Bypass mode** alarm disappears from the MDU.
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 turn on the general circuit breaker between battery strings and the UPS. The **No battery** alarm disappears from the MDU.
3. Turn on the UPS downstream output switch to supply power to the loads.

5.5 (Optional) Setting Parameters for the BCB Box

1. If a BCB box is configured, set **MUE05A connection** to **Enable** in **System Info** > **Settings** > **Dry Contacts Set**, and then set **BCB connection [OL]** and **Battery breaker [STA]** to **Enable**.



6 Shutting Down the UPS

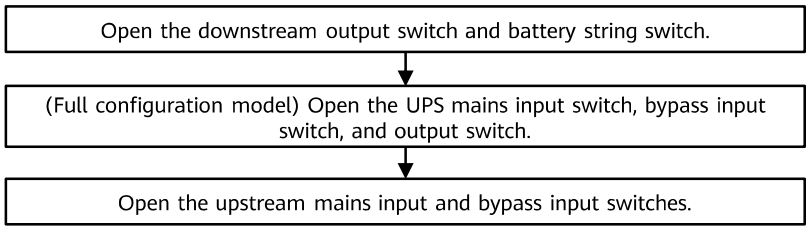
NOTICE

After you shut down the inverter, the UPS transfers to bypass mode if the bypass is normal; the UPS supplies no power if the bypass is abnormal. Before shutting down the UPS, ensure that all loads have been shut down.

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

1. On the main menu of the LCD, choose **Common Functions** and tap **Inv. OFF**.
2. In the displayed login window, enter the user name and password, and tap ↵ .
3. In the displayed dialog box, tap **Yes** to shut down the inverter.

6.2 Powering Off a Single UPS



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