

Please Note

Electrical equipment should only be installed, operated, serviced and maintained by qualified personnel. A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.



NOTICE

Read all instructions in the manual carefully and look at the equipment to become familiar with it before attempting to install, operate, service or maintain it. All safety instructions in this document or on the equipment must be read, understood and followed.



WARNING

Do not install the UPS system until all construction work has been completed and the installation room has been cleaned.

The UPS system must be properly earthed/grounded and due to a high leakage current, the earthing / grounding conductor must be connected first.

Servicing of batteries must only be performed or supervised by qualified personnel knowledgeable of batteries and the required precautions. Keep unqualified personnel away from batteries.

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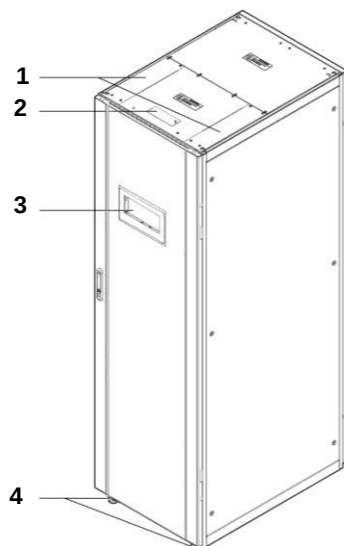
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1 Introduction

1.1 Front View of the UPS

Figure 1-1 shows the front view of 200 kVA and 300 kVA UPS.

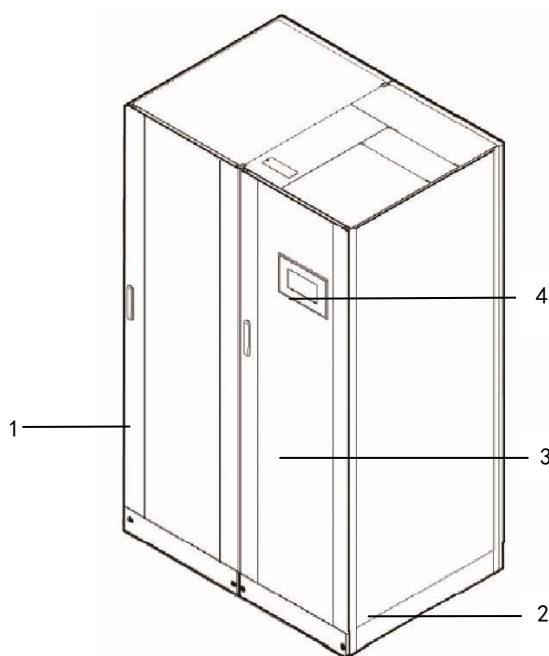
Figure 1-1 200 kVA and 300 kVA UPS



1 Top outlet hole cover	2 Control cable outlet hole cover	3 Monitor display unit (MDU)	4 Idler wheel
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Figure 1-2 shows the front view of 400 kVA and 500 kVA UPS.

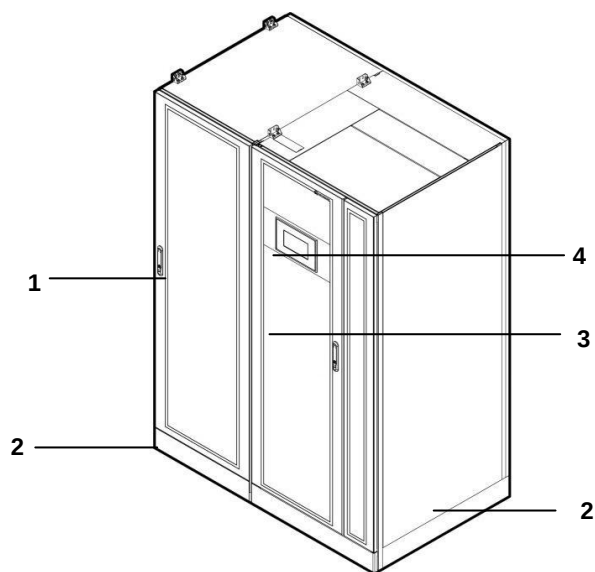
Figure 1-2 400 kVA and 500 kVA UPS



1 Power cabinet	2 Anchor baffle plates	3 Bypass cabinet	4 Monitor display unit (MDU)
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Figure 1-3 shows the front view of 600 kVA UPS.

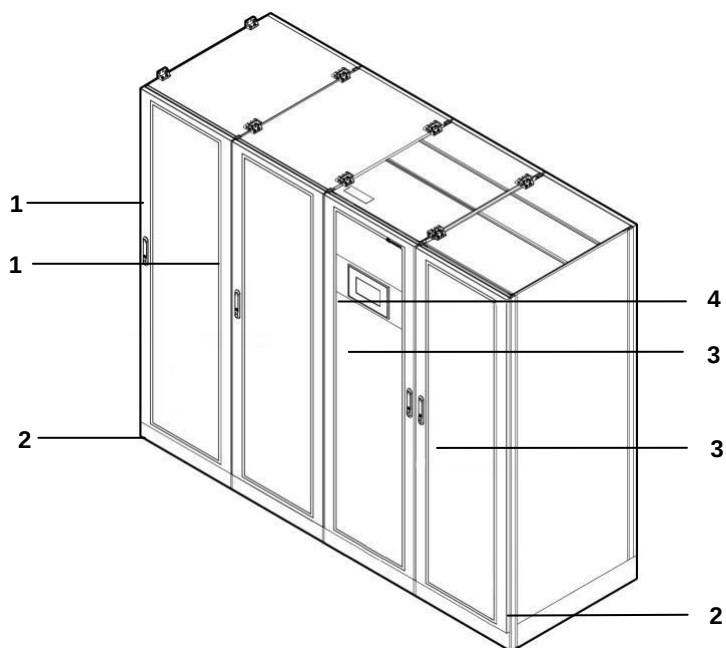
Figure 1-3 600 kVA UPS



1 Power cabinet	2 Anchor baffle plates	3 Bypass cabinet	4 Monitor display unit (MDU)
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Figure 1-4 shows the front view of 800 kVA UPS.

Figure 1-4 800 kVA UPS

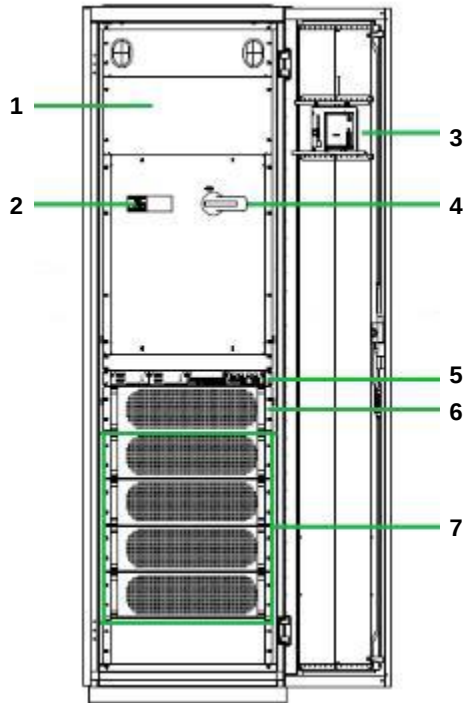


1 Power cabinet	2 Anchor baffle plates	3 Bypass cabinet	4 Monitor display unit (MDU)
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1.1.1 Product Structure

Figure 1-5 shows the product structures of 200 kVA UPS in standard configuration.

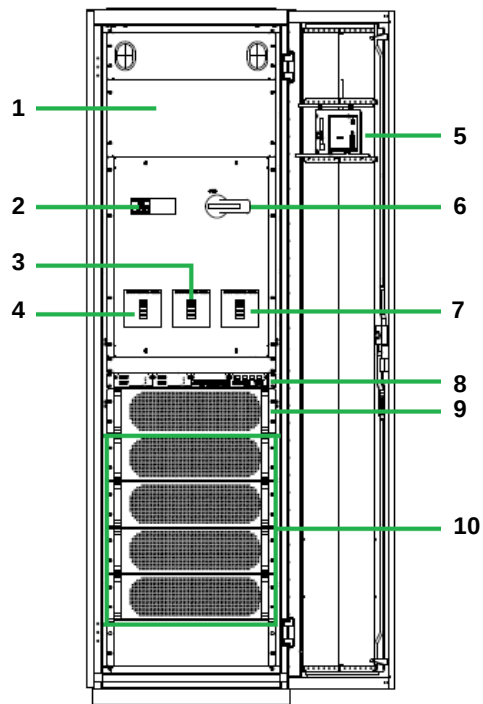
Figure 1-5 200 kVA UPS structure in standard configuration



1 Power distribution subrack cover	2 Lightning protection device (optional)	3 Monitor display unit (MDU)
4 Maintenance bypass switch	5 Control module	6 Bypass module
7 Output switch		

Figure 1-6 shows the product structures of 200 kVA UPS in full configuration.

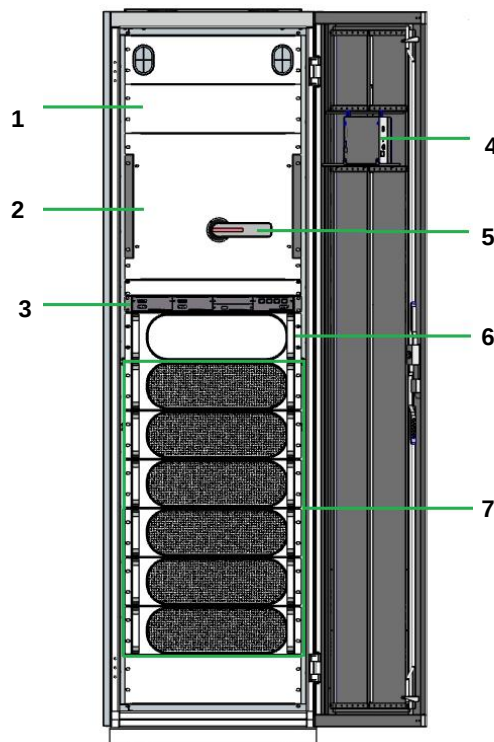
Figure 1-6 200 kVA UPS structure in full configuration



1 Power distribution subrack cover	2 Lightning protection device (optional)	3 Bypass input switch
4 Mains input switch	5 Monitor display unit (MDU)	6 Maintenance bypass switch
7 Output switch	8 Control module	9 Bypass module
10 Power module		

Figure 1-7 shows the product structure of 300 kVA UPS (top cable entry).

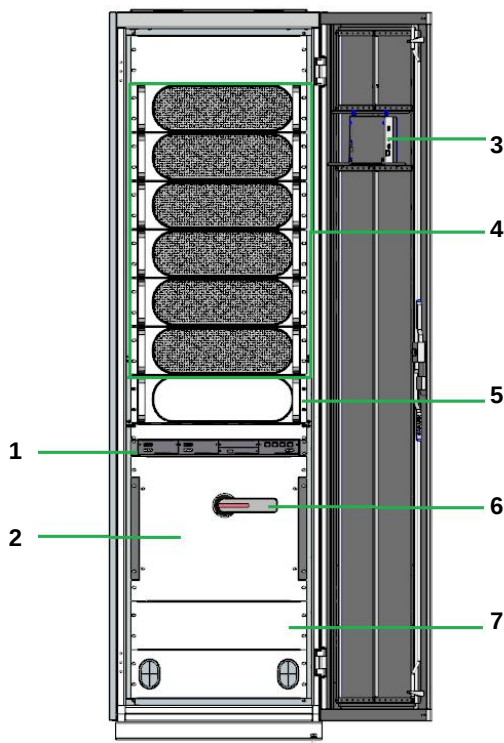
Figure 1-7 300 kVA UPS structure (top cable entry)



1 Filler panel	2 Power distribution subrack cover	3 Control module
4 Monitor display unit (MDU)	5 Maintenance bypass switch	6 Bypass module
7 Power module		

Figure 1-8 shows the product structure of 300 kVA UPS (bottom cable entry).

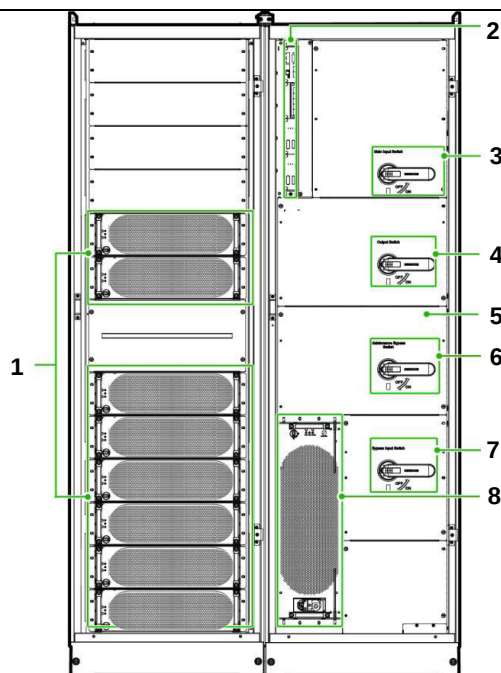
Figure 1-8 300 kVA UPS structure (bottom cable entry)



1 Control module	2 Power distribution subrack cover	3 Monitor display unit (MDU)
4 Power module	5 Bypass module	6 Maintenance bypass switch
7 Filler panel		

Figure 1-9 shows the product structure of 400 kVA UPS in full configuration.

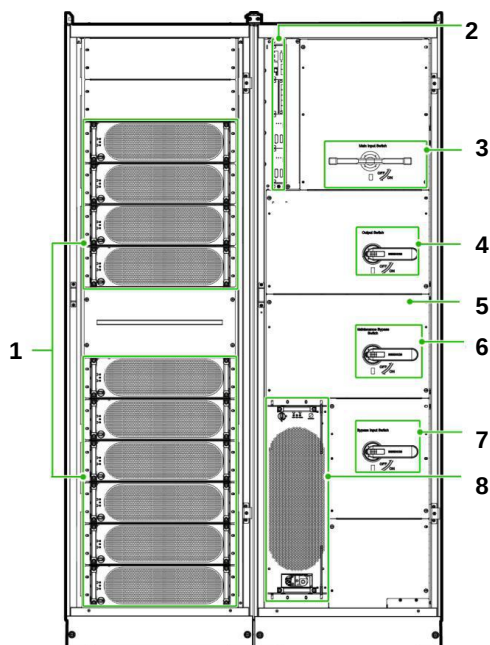
Figure 1-9 400 kVA UPS structure



1 Power modules	2 Control module, optional card slot	3 Mains input switch
4 Output switch	5 Power distribution module cover	6 Maintenance bypass switch
7 Bypass input switch	8 Bypass module	

Figure 1-10 shows the product structure of 500 kVA UPS in full configuration.

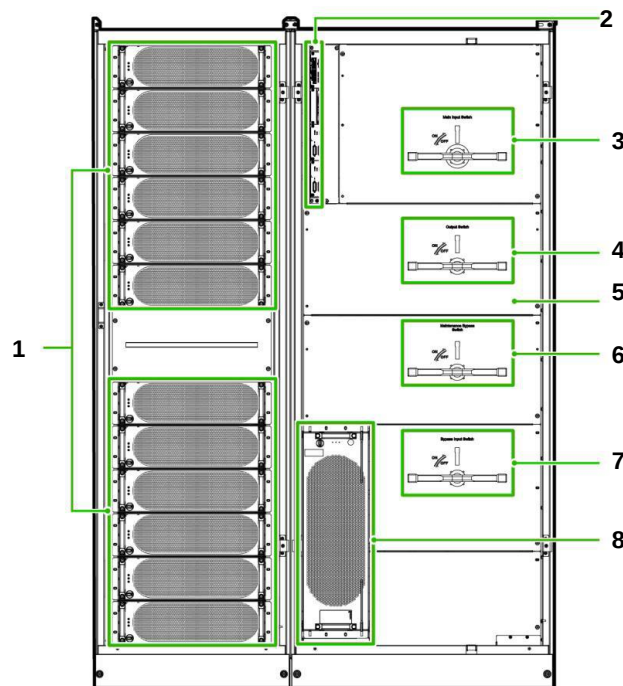
Figure 1-10 500 kVA UPS structure



1 Power modules	2 Control module, optional card slot	3 Mains input switch
4 Output switch	5 Power distribution module cover	6 Maintenance bypass switch
7 Bypass input switch	8 Bypass module	

Figure 1-11 shows the product structure of 600 kVA UPS in full configuration.

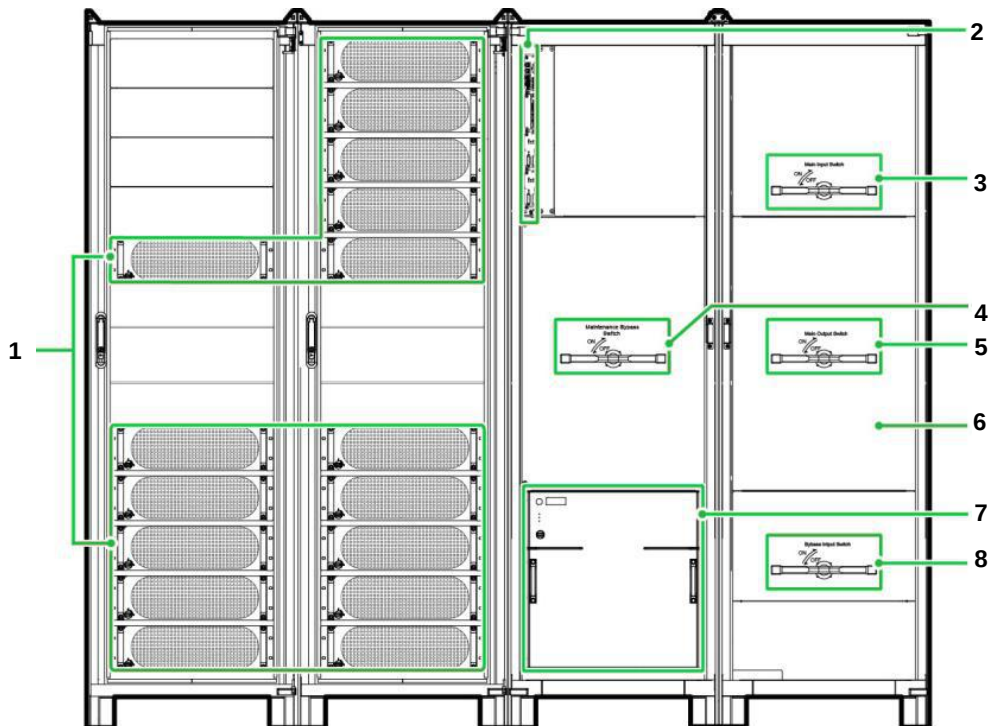
Figure 1-11 600 kVA UPS structure



1 Power modules	2 Control module, optional card slot	3 Mains input switch
4 Output switch	5 Power distribution module cover	6 Maintenance bypass switch
7 Bypass input switch	8 Bypass module	

Figure 1-12 shows the product structures of 800 kVA UPS in full configuration.

Figure 1-12 800 kVA UPS structure



1 Power modules	2 Control module, optional card slot	3 Mains input switch
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4 Maintenance bypass switch	5 Output switch	6 Power distribution module cover
7 Bypass module	8 Bypass input switch	

1.1.2 Control Module

1.1.2.1 Overview

The control module (CM) is located in the upper left corner of the bypass cabinet.

In a standard configuration, the CM provides two energy control modules (ECMs), one dry contact card and one monitoring interface card (from left to right). One subrack is reserved above the dry contact card. You can insert a backfeed protection card or dry contact extended card into this subrack.

Figure 1-13 shows the CM.

Figure 1-13 Signal control ports on the CM

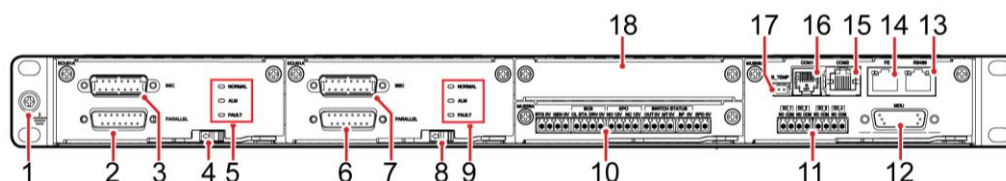


Table 1-1 Signal control ports on the CM

1 Ground terminal	2 Parallel port 1	3 BSC port 1	4 ECM switch 1
5 ECM1 indicator	6 Parallel port 2	7 BSC port 2	8 ECM switch 2
9 ECM2 indicator	10 Dry contact card	11 Dry contact port	12 MDU port
13 RS485 port	14 FE port	15 COM2 Port	16 COM1 Port
17 Temperature and humidity sensor port	18 Optional board subrack cover		



NOTE

Ports are protected by the security mechanism.

1.1.2.2 ECM

The ECM provides two active/standby energy control modules (ECMs). Each ECM provides one BSC port and one parallel port, as shown in Figure 1-14.

Figure 1-14 ECM



Table 1-2 ECM

1 BSC port	3 Operation indicator	5 Fault indicator
2 Parallel port	4 Warning indicator	

In a parallel system, the PARALLEL ports on UPSs are interconnected using parallel cables in a loop. For a single UPS, the parallel cable is not needed. The BSC port is used in a dual-bus system to process the communications information between two UPS systems. Table 1-3 describes the system control interface function.

Table 1-3 System control interface function

Name	Description
PARALLEL	This port transmits parallel signals. To connect UPSs in parallel, use a parallel cable to connect the parallel ports on the UPSs in a loop. N UPSs require N parallel cables so that at least two parallel cables are connected to each UPS, which improves reliability.
BSC	This port is used in a dual-bus system to balance output frequencies and phases between UPS systems, ensuring that two buses can switch with each other.

1.1.2.3 Dry contact card

The dry contact card allows the UPS to control and monitor the battery circuit breaker (BCB) box and implement remote emergency power-off (EPO).

Figure 1-15 shows the signal ports on the dry contact card.

Figure 1-15 Dry contact card

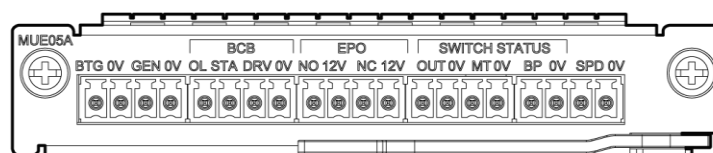


Table 1-4 describes the ports on the dry contact card.

Table 1-4 Ports on the dry contact card

Name	Description	Status	Initial Status
BTG	Port for detecting battery grounding faults	- Connected: battery grounding failure - Disconnected: no battery grounding failure	Disconnected
0V	Secondary side ground		
GEN	Port for detecting diesel generator (D.G.) mode	- Connected: D.G. mode - Disconnected: non-D.G. mode	Disconnected
0V	Secondary side ground		
BCB_OL	Port for detecting the BCB box	- Grounded: BCB box connected - Floated: BCB box not connected	Grounded
BCB_STA	Port for monitoring the battery switch	- Connected: battery switch ON - Disconnected: battery switch OFF	Disconnected
BCB_DRV	Controls the trip of the battery switch in the BCB box	0 V: battery switch not tripped 12 V: battery switch tripped	0V
BCB_0V	Secondary side ground		
EPO_NO	If the normally open (NO) port is connected to the EPO_12V port, EPO is triggered.	Emergency power-off (EPO) port	Disconnected
EPO_12V	+12V		

Name	Description	Status	Initial Status
EPO_NC	If the normally open (NO) port is connected to the EPO_12V port, EPO is triggered.	Emergency power-off (EPO) port	Connected
EPO_12V	+12V		
SWITCH STATUS_OUT	Port for monitoring the UPS output circuit breaker	- Connected: circuit breaker ON - Disconnected: circuit breaker OFF	Connected
SWITCH STATUS_0V	Secondary side ground		
SWITCH STATUS_MT	Port for monitoring the maintenance circuit breaker	- Connected: circuit breaker OFF - Disconnected: circuit breaker ON	Disconnected
SWITCH STATUS_0V	Secondary side ground		
SWITCH STATUS_BP	Port for monitoring the bypass input circuit breaker	- Connected: circuit breaker ON - Disconnected: circuit breaker OFF	Connected
SWITCH STATUS_0V	Secondary side ground		
SPD	Port for monitoring the input AC surge protective device (SPD)	- Connected: SPD enabled - Disconnected: SPD disabled	Connected
0V	Secondary side ground		



NOTE

NO is short for normally open, and NC is short for normally closed.

1.1.2.4 Monitoring Interface Card

The monitoring interface card provides external ports as well as monitoring and control functions for the MDU. The ports include the ambient temperature and humidity sensor port, battery monitoring unit (BMU) port, FE port and network management port.



NOTICE

- The FE port resembles the RS485 port. Therefore, follow the silk screen when you connect communications cables. If you mistake the RS485 port as the FE port during cable connection, the WebUI and MDU communication fails. If you mistake the FE port as the RS485 port during cable connection, RS485 communication fails.
- If MDU communication fails, the "Comm. failure" message is displayed on the LCD, screen switching is disabled, the buzzer buzzes, and the Fault indicator is red. After you rectify the fault, the LCD recovers, and the alarm is cleared.
- Dry contact signals take effect after you set them. Set unused dry contact signals to the unused state on the WebUI or LCD.
- In a parallel system, ensure that used dry contacts properly connect to each UPS.

Figure 1-16 shows the monitoring interface card.

Figure 1-16 Monitoring interface card

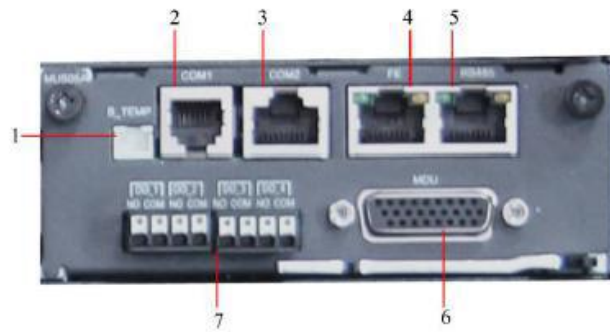


Table 1-5 describes the ports on the monitoring interface card.

Table 1-5 Ports on the monitoring interface card

1 B_TEMP: battery temperature sampling	2 COM1: sensor interface	3 COM2: battery monitoring device interface
4 FE port: support SNMP	5 RS485: network management port	6 MDU: monitoring display module port
7 Dry contacts		

Table 1-6 describes the ports on the monitoring interface card.

Table 1-6 Ports on the monitoring interface card

Port	Name	Description
DO_1	NO	DO indicates critical alarms, minor alarms, bypass mode, battery mode, low battery voltage, or D.G. control. DO_1 indicates any of the six meanings (except for D.G. control); the maximum voltage and current is 30V DC/1A. By default, it indicates critical alarms.
	COM	
DO_2	NO	DO indicates critical alarms, minor alarms, bypass mode, battery mode, low battery voltage, or D.G. control. DO_2 indicates any of the six meanings (except for D.G. control); the maximum voltage and current is 30V DC /1 A. By default, it indicates minor alarms.
	COM	
DO_3	NO	DO indicates critical alarms, minor alarms, bypass mode, battery mode, low battery voltage, or D.G. control. DO_3 indicates any of the six meanings (except for D.G. control); the maximum voltage and current is 30V DC /1 A. By default, it indicates bypass mode.
	COM	
DO_4	NO	DO indicates critical alarms, minor alarms, bypass mode, battery mode, low battery voltage, or D.G. control. DO_4 indicates any of the five meanings (except for D.G. control); the maximum voltage and current is 30V DC/1A. By default, it indicates battery mode. When the UPS works in intelligent mode.
	COM	
DB26	MDU	DB26, Provides FE, RS485, Inter-Integrated Circuit (I2C), and control area network (CAN) signals.
Battery temperature sensor port	B_TEM P	Connects to an indoor battery temperature sensor, for example, a short-distance battery temperature sensor.
South bound port 1	COM1	Connects to an ambient temperature and humidity sensor over two wires.
South bound port 2	COM2	Connects to a southbound device, such as a BMU.

Port	Name	Description
North bound communications port	FE	Connects to the network port on a PC.
	RS485	Connects to a northbound network management device or third-party network management device over two wires.



NOTE

- ✧ Signal cables must be double-insulated twisted cables. If the cable length is 25m~50 m, the cross-sectional area must be $0.5 \text{ mm}^2 \sim 1.5 \text{ mm}^2$.

RS485 cables and FE cables must be shielded cables.

2 Installation

2.1 Installation Preparations

2.1.1 Site

2.1.1.1 UPS Weight and Dimensions

Ensure that the floor or installation support can bear the weight of the UPS, batteries, and battery racks. The weight of batteries and battery racks depends on the UPS configuration for the site. Table 2-1 lists the UPS weights.

Table 2-1 UPS weight

Capacity	Weight
200 kVA (standard configuration)	343 kg
200 kVA (full configuration)	363 kg
300 kVA (standard configuration)	437 kg
400 kVA (full configuration)	675 kg
500 kVA (full configuration)	725 kg
600 kVA (full configuration)	1007 kg
800 kVA (full configuration)	1545 kg

Figure 2-1 200 kVA/300 kVA UPS dimensions (mm)

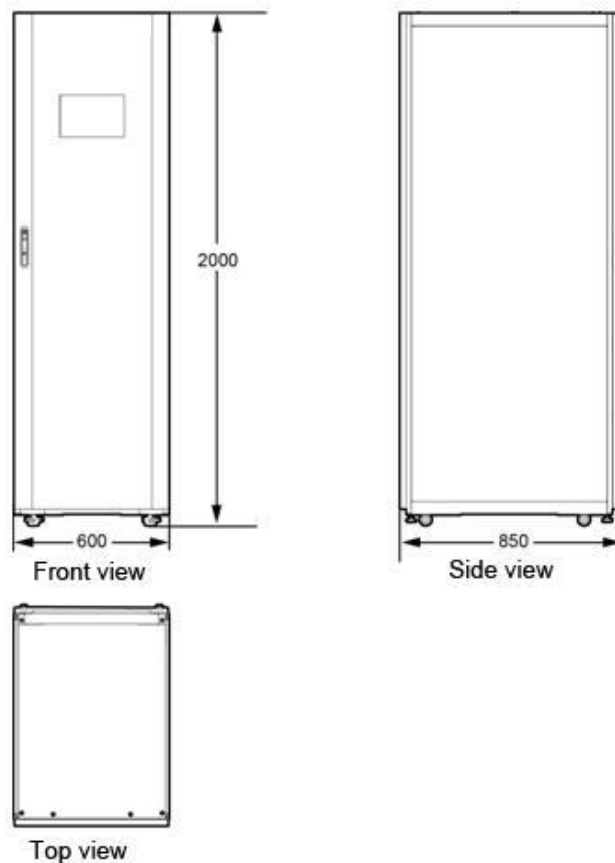


Figure 2-2 400 kVA/500 kVA UPS dimensions (mm)

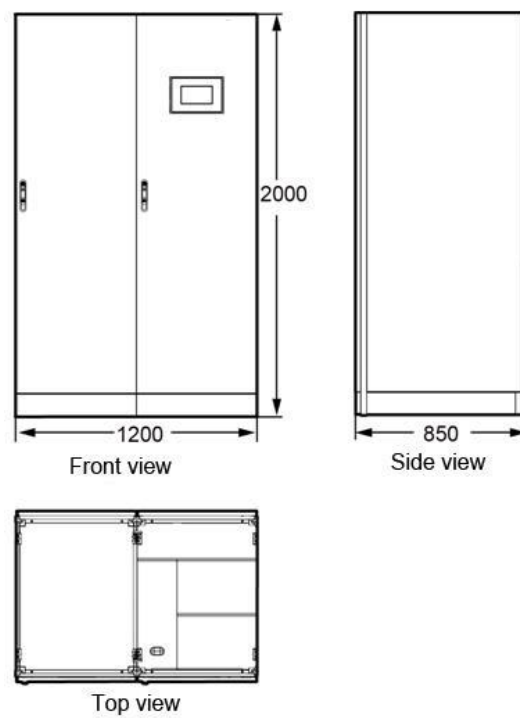


Figure 2-3 600 kVA UPS dimensions (mm)

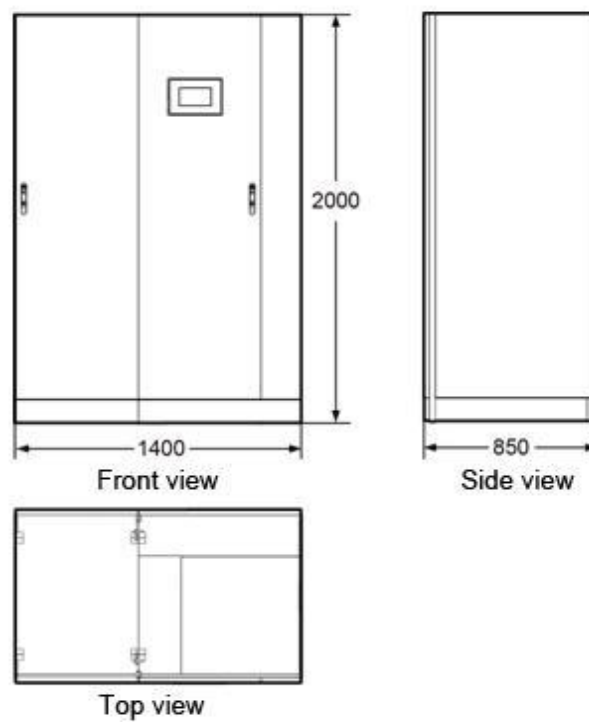
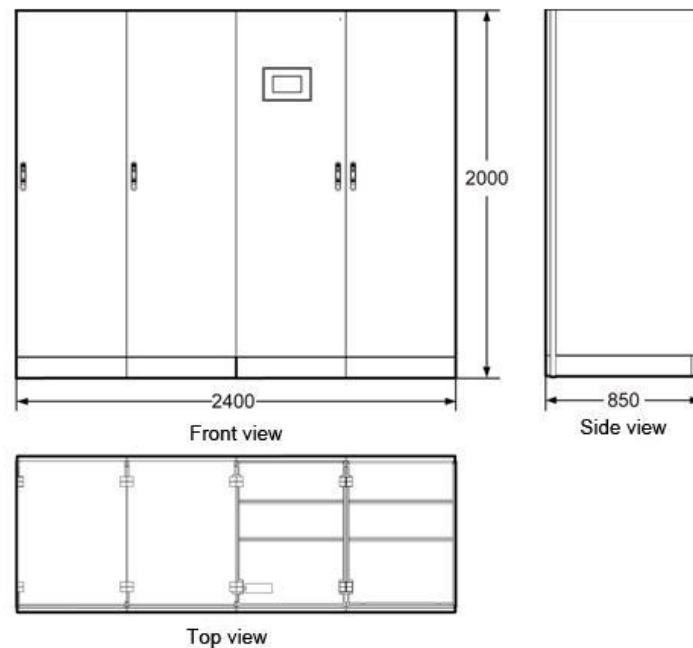


Figure 2-4 800 kVA UPS dimensions (mm)



2.1.1.2 Installation Environment

Do not install the UPS in high temperature, low temperature, or damp areas.

Table 2-2 Environmental specifications

Environmental specifications	
Operating temperature	0℃~40℃
Storage temperature	-40℃~+70℃
Humidity	0% RH~95% RH (no-condensing)
Operating altitude	0m~1000m Derating for above 1000m reference to IEC62040-3, Maximum 4000m
Noise level	< 70dB

- Install the UPS far away from water sources, heat sources, and flammable or explosive materials. Keep the UPS away from direct sunlight, dust, volatile gases, corrosive materials, and salty air.
- Do not install the UPS in environments with conductive metal scraps in the air.
- The optimal operating temperatures for valve regulated lead acid (VRLA) batteries are 20–30℃. Operating temperatures higher than 30℃ shorten the battery lifespan, and operating temperatures lower than 20℃ reduce the battery backup time.

2.1.1.3 Installation Clearances

Reserve sufficient clearances around the cabinet to facilitate operations and ventilation:

- Reserve a clearance of at least 800 mm from the front of the cabinet.
- Reserve a clearance of at least 500 mm from the top of the cabinet.
- Keep a clearance of at least 500 mm at the rear of the cabinet. If you need to perform operations at the rear of the cabinet, keep a clearance of at least 800 mm.

Figure 2-5, Figure 2-6 and Figure 2-7 show installation clearances.

Figure 2-5 Reserved clearances for 200 kVA/300 kVA UPS (mm)

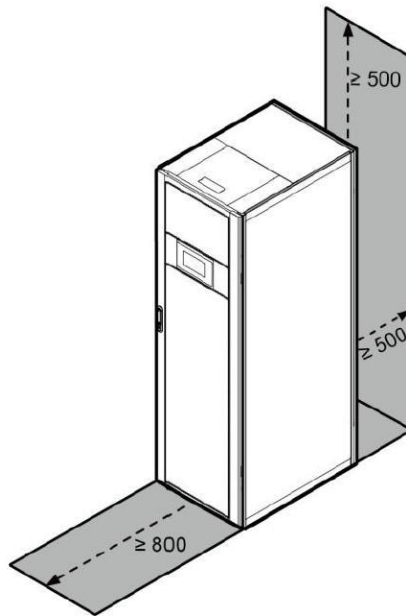


Figure 2-6 Reserved clearances for 400 kVA/500 kVA/600 kVA UPS (mm)

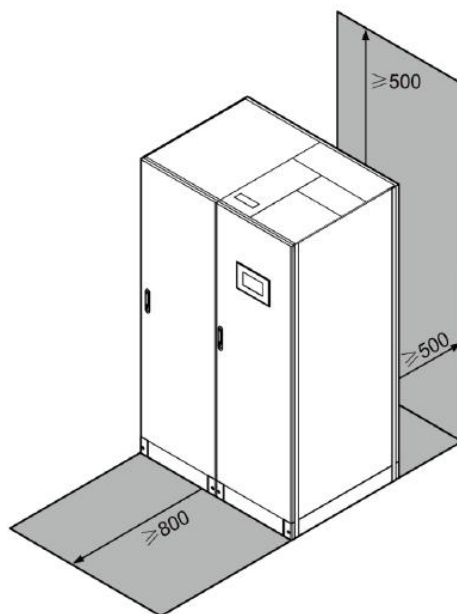
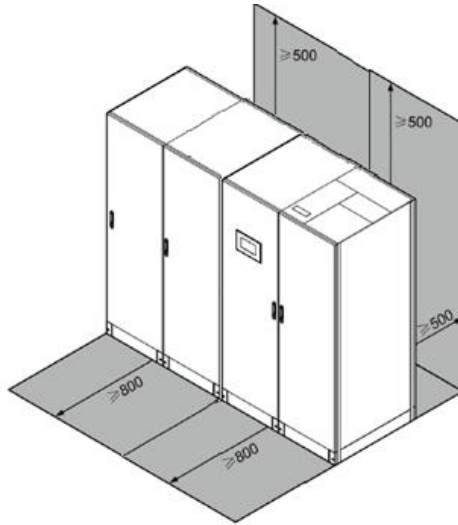


Figure 2-7 Reserved clearances for 800 kVA UPS (mm)



2.1.2 Power Cables



NOTICE

- The UPS can generate large leakage currents. A circuit breaker that provides leakage current protection is not recommended.
- If multiple UPSs are connected in parallel, input and output power cables for each UPS should have the same length and specifications.

Table 2-3 lists the recommended cross-sectional areas for power cables.

Table 2-3 Recommended cross-sectional areas for power cables

Item			200 kVA	300 kVA	400 kVA	500 kVA	600 kVA	800 kVA
Mains input	Mains input (A)		355	532	710	887	1065	1420
	Recommended cross-sectional area (mm ²)	L1	2×(4×95)	2×(4×150)	2×(4×240)	3×(4×240)	4×(4×185)	4×(4×240)
		L2						
		L3						
		N						
Bypass input	Bypass input current (A)		272	409	545	681	818	1090
	Recommended cross-sectional area (mm ²)	L1	2×(4×95)	2×(4×150)	2×(4×240)	3×(4×240)	4×(4×185)	4×(4×240)
		L2						
		L3						
		N						
Output	Output current (A)		272	409	545	681	818	1090

Item			200 kVA	300 kVA	400 kVA	500 kVA	600 kVA	800 kVA
	Recommen- ded cross- sectional area (mm ²)	U	2×(4×95) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)	2×(4×150) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)	2×(4×240) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)	3×(4×240) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)	4×(4×185) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)	4×(4×240) (If the voltage is non-linear, increase the cross- sectional area of the neutral wire.)
		V						
		W						
		N						
Battery input	Nominal discharge current (384 V current; forty 12 V batteries) (A)		391	586	781	977	1172	1562
	Maximum discharge current (end of discharge current of forty 12 V batteries, namely, 1.67 V/cell discharge current of 240 of 2 V cells) (A)		468	703	937	1171	1406	1875
	Recommen- ded cross- sectional area (mm ²)	+	2×(3×120)	2×(3×185)	2×(3×240)	3×(3×185)	3×(3×240)	4×(3×240)
		N						
Ground cable	Recommen- ded cross- sectional area (mm ²)	–						
		PE	240	240	240	240	240	240



NOTE

- When selecting, connecting, and routing power cables, follow local safety regulations and rules.
- If external conditions such as cable layout or ambient temperatures change, perform verification in accordance with the IEC-60364-5-52 or local regulations.
- The currents listed in Table 2-3 are measured at a rated voltage of 380 V. If the rated voltage is 400 V, multiply the currents by 0.95. If the rated voltage is 415 V, multiply the currents by 0.92.
- If primary loads are non-linear loads, increase the cross-sectional areas of neutral wires 1.5–1.7 times.
- When the mains input and bypass input share a power source, configure both types of input power cables as mains input power cables. The cables listed in Table 2-3 are used only when the following requirements are met:
- Cable routing mode: route cables along the wall or floor in accordance with mode F in the IEC-60364-5-52.
- The ambient temperature is 30℃.

- The AC voltage loss is less than 3%, and the DC voltage loss is less than 1%.
- 90°C soft power cable with a copper conductor.
- The recommended AC power cable is no longer than 30 m, and the DC power cable is no longer than 50 m.

Table 2-4 The power cable connector requirements for 200 kVA/300 kVA UPS

Connector	Connection Mode	Bolt Type	Bolt Hole Diameter
Mains input connector	Crimped OT terminals	M10/M12	10.5/13.5mm
Bypass input connector	Crimped OT terminals	M10/M12	10.5/13.5mm
Battery input connector	Crimped OT terminals	M12	10.5/13.5mm
Output connector	Crimped OT terminals	M10/M12	13.5mm
Grounding connector	Crimped OT terminals	M10/M12	10.5/13.5mm

Table 2-5 The power cable connector requirements for 400 kVA/500 kVA/600 kVA/800 kVA UPS

Connector	Connection Mode	Bolt Type	Bolt Hole Diameter
Mains input connector	Crimped OT terminals	M16	18mm
Bypass input connector	Crimped OT terminals	M16	18mm
Battery input connector	Crimped OT terminals	M16	18mm
Output connector	Crimped OT terminals	M16	18mm
Grounding connector	Crimped OT terminals	M12	18mm

Table 2-6 Recommended input front-end circuit breaker configurations

Input front-end circuit breaker	200 kVA	300 kVA	400 kVA	500 kVA	600 kVA	800 kVA
Mains input front-end switch	400A/3P	630A/3P	800A/3P	1000A/3P	1250A/3P	1600A/3P
Bypass input front-end switch	400A/3P	630A/3P	630A/3P	800A/3P	1000A/3P	1250A/3P

**NOTE**

- The recommended input upstream circuit breakers are for reference only.
- If multiple loads are connected, specifications for branch circuit breakers must not exceed the recommended specifications.
- The circuit breaker selection principle is to protect loads and cables, and the cascading principle is to realize specific protection.

2.1.3 Unpacking and Checking

Context



NOTICE

- Only trained personnel are allowed to move the UPS. Use a pallet truck to transport the UPS box secured to a wooden support to the installation position.
- To prevent the UPS from falling over, secure it to a pallet truck using ropes before moving it.
- To prevent shocks or falls, move the UPS gently. After placing the UPS in the installation position, unpack it and take care to prevent scratches. Keep the UPS steady during unpacking.
- If the UPS installation environment is in poor condition and the UPS will be stored for a long time after it is unpacked, wrap the UPS with the original plastic coat to prevent dust.



NOTE

The power cabinet and bypass cabinet are separately delivered. Therefore, perform the following operations for both the power cabinet and bypass cabinet.

Procedure

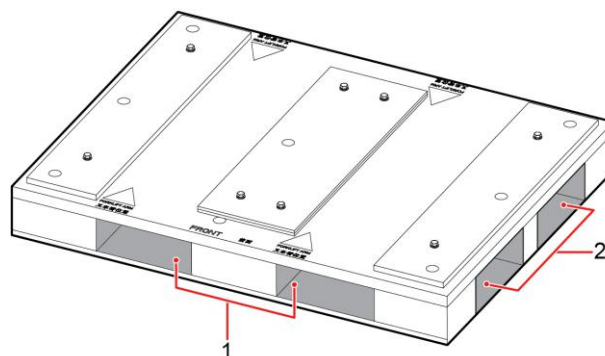
- Step 1 Check the UPS packing. (If any shipping damage is founded, report it to the carrier immediately.)
- Step 2 Use a pallet truck to move the power cabinet and bypass cabinet near the installation position.



NOTICE

To prevent the UPS from falling over during transportation, the pallet is specially designed. If an electric pallet truck is used, insert the forks into the front of the pallet; if a manual pallet truck is used, insert the forks into the left or right side of the pallet, as shown in Figure 2-8.

Figure 2-8 Pallet



1 Place for inserting the forks of an electric pallet truck

2 Place for inserting the forks of a manual pallet truck

Step 3 Cut off and remove the binding straps, remove packing and plastic bag and take out the fitting box, keep properly.

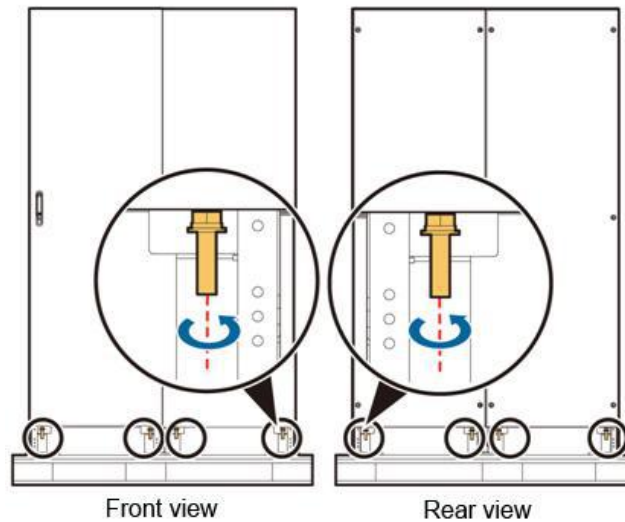
Step 4 Check whether the UPS is intact.

1. Visually inspect the UPS appearance for shipping damage. If it is damaged, notify the carrier immediately.

2. Check that the fittings comply with the packing list. If some fittings are missing or do not comply with the packing list, record the information and contact your local office immediately.

Step 5 Remove the screws that secure the cabinet and pallet, as shown in Figure 2-9.

Figure 2-9 Removing the screws from the cabinet and pallet



2.2 Single UPS Installation

Context

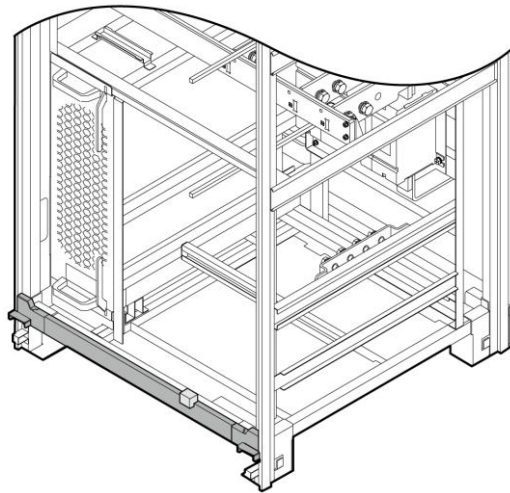
UPSs in standard configurations and full configurations have the same installation procedures and cable connection modes. This section uses UPSs in full configurations as examples.



NOTICE

When you install the UPS and connect cables, do not step on the front door baffle plate and the door support at the bottom of the cabinet to prevent paint flake-off and deformation, otherwise, the front door will not be properly closed. As shown in Figure 2-10.

Figure 2-10 Front door baffle plate



2.2.1 Installing a UPS

2.2.1.1 System Installation (200 kVA-600 kVA)



NOTICE

- Ensure that the installation floor is flat.
- The marking-off template is delivered with the UPS and is placed at the top of the UPS.

Step 1 Determine the position for installing the UPS and mark mounting holes (ground installation and channel installation), as shown in Figure 2-11, Figure 2-12 and Figure 2-13.

Figure 2-11 200 kVA/300 kVA UPS installation dimensions

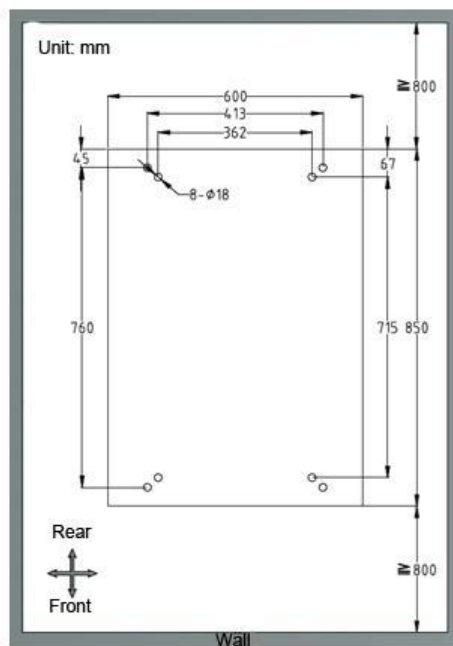


Figure 2-12 400 kVA/500 kVA UPS installation dimensions

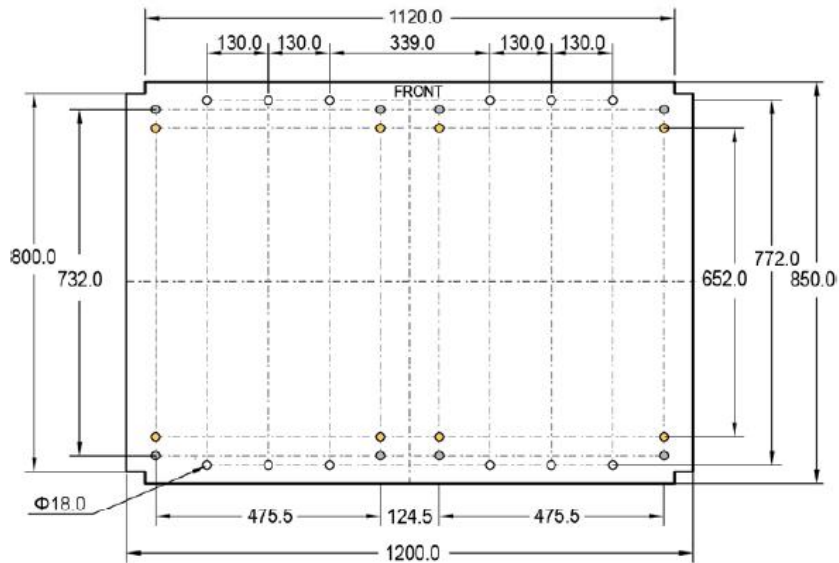
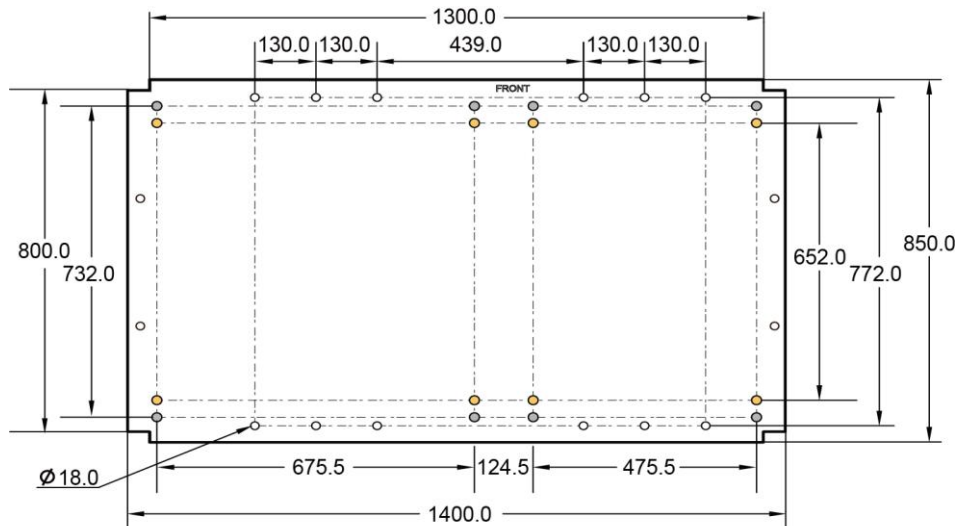


Figure 2-13 600 kVA UPS installation dimensions



NOTICE

- This company does not supply U-steel and expansion bolt for fixing U-steel, which need to be purchased by users. The recommended width of U-steel is more than 50mm.
- Ensure that the outside clearance is 800mm, and fix U-steel with expansion bolt on the ground.
- Ensure that U-steel surface is flat.

Step 2 Use a hammer drill to drill holes for installing the expansion bolts and then install the eight expansion bolts in the holes.

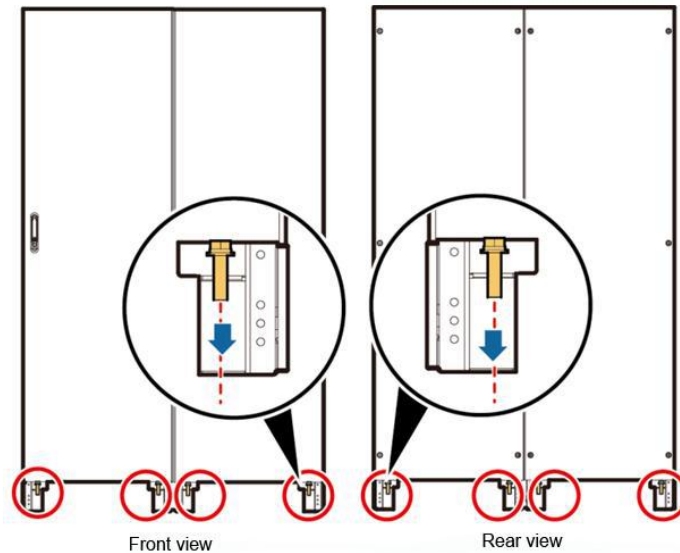
NOTICE

Knock the expansion bolts into the holes until the expansion sleeve completely fit into the holes. The expansion tubes must be completely buried under the ground to facilitate subsequent installation.

Step 3 Move the cabinet to the installation position. Place it aligning expansion bolts exactly with holes.

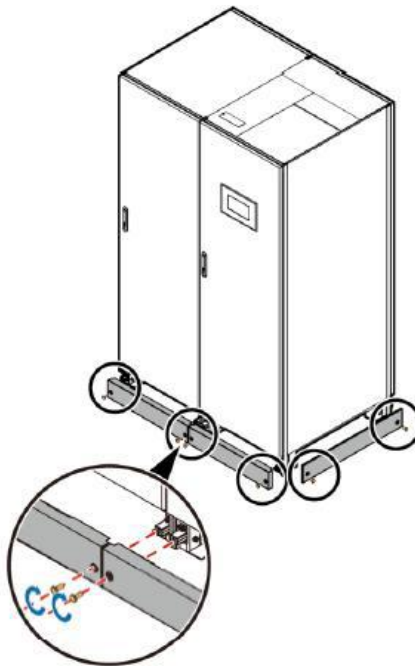
Take the system cabinet of 500 kVA as example, as shown in Figure 2-14.

Figure 2-14 Fasten expansion bolts



Step 4 Install front and back anchor plates and side anchor plates; take the cabinet of 500 kVA as example, as shown in Figure 2-15.

Figure 2-15 Install front and back anchor plate

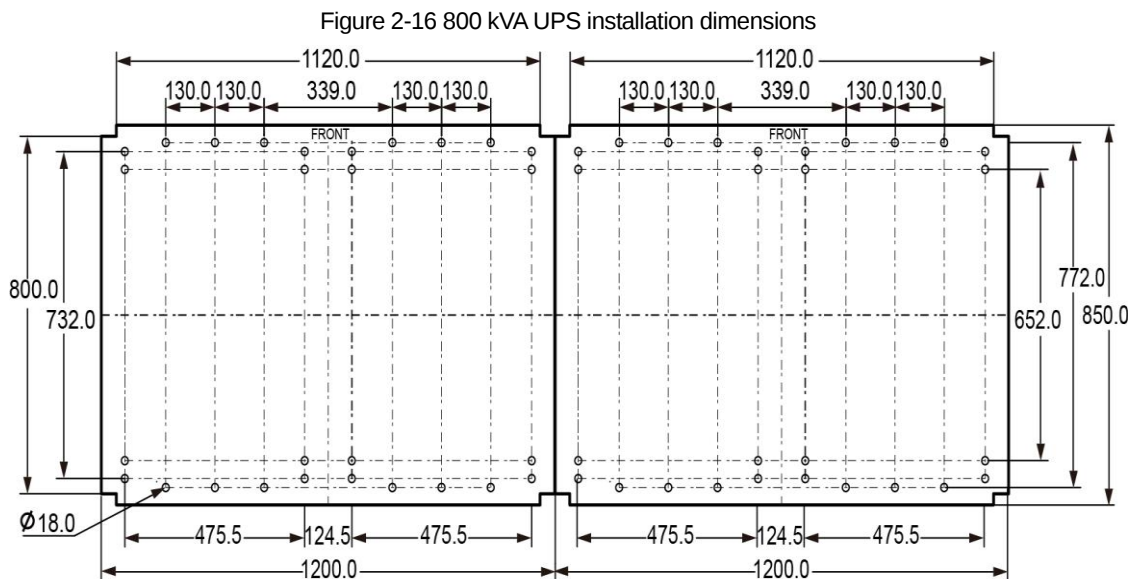


2.2.1.2 System Installation (800 kVA)

NOTICE

- Ensure that the installation floor is flat.
- The marking-off template is delivered with the UPS and is placed at the top of the UPS.

Step 1 Determine the position for installing the UPS and mark mounting holes (ground installation and channel installation), as shown in Figure 2-16.



NOTICE

- This company does not supply U-steel and expansion bolt for fixing U-steel, which need to be purchased by users. The recommended width of U-steel is more than 50mm.
- Ensure that the outside clearance is 800mm, and fix U-steel with expansion bolt on the ground.
- Ensure that U-steel surface is flat.

Step 2 Combine the power cabinet and the bypass cabinet.

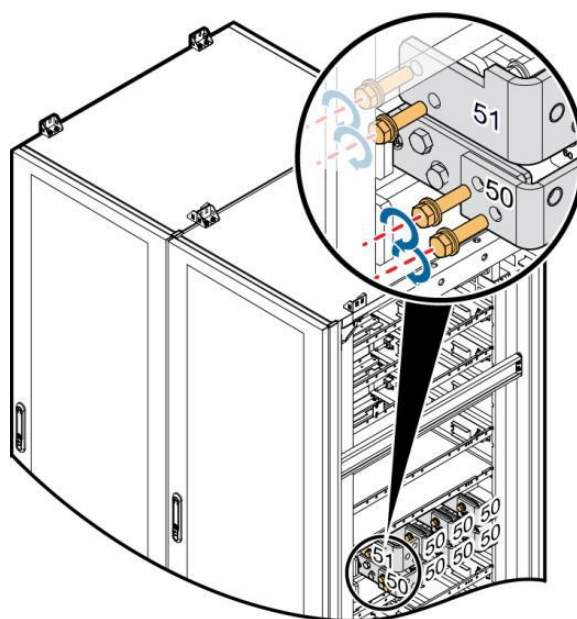
The power cabinet and bypass cabinet are separately delivered. It needs to combine the power cabinet and the bypass cabinet before installing the UPS. Please carefully check if the required accessories are complete, as shown in Table 2-7.

Table 2-7 Installation accessories of combining cabinets

Installation accessories	Quantity (piece)	Specifications of the bolts for fixing accessories	Bolt quantity (PCS)	Torque	Note
Bottom parallel plate	2	M12×25	8	26Nm	The accessories are delivered with the device, which can be seen after removing the packaging of bypass cabinet. The serial number of the two connection soft copper bars is 52. The serial numbers of the eight L-type connection copper bars consist of 7 serial numbers of 50 and 1 serial number of 51.
Top parallel plate	2	M6×30	8	3Nm	
Connection soft copper bar	2	M12×45	16	47Nm	
L-type connection copper bar	8	M12×45	10	47Nm	They have been installed on the cabinet.
Middle parallel plate	2	M6×30	4	3Nm	

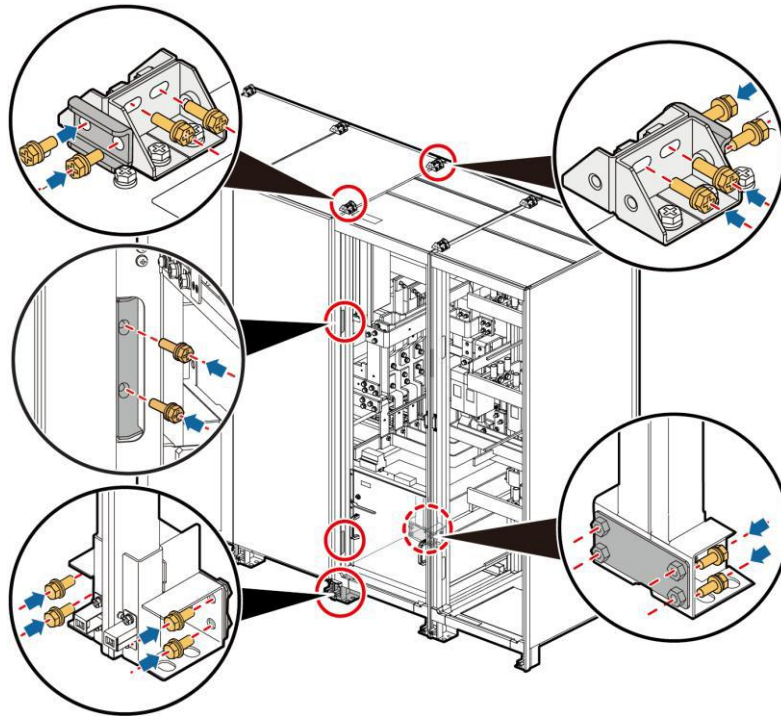
- 1 Move the UPS power cabinet to the installation position and open the front door of the power cabinet.
- 2 Take eight L-type connection copper bars from the accessories and install them to the power cabinet in the order from the inside to the outside (If the eight L-type connection copper bars have been installed on the cabinet, you do not need to operate this step), as shown in Figure 2-17.

Figure 2-17 Install L-type connection copper bars



- 3 Move the UPS bypass cabinet to the installation position and open the front door of the bypass cabinet. Install the parallel cabinet plates between the bypass cabinet and the adjacent power cabinet in bottom-top-middle order, as shown in the Figure 2-18.

Figure 2-18 Install the parallel cabinet plates between the bypass cabinet and the adjacent power cabinet

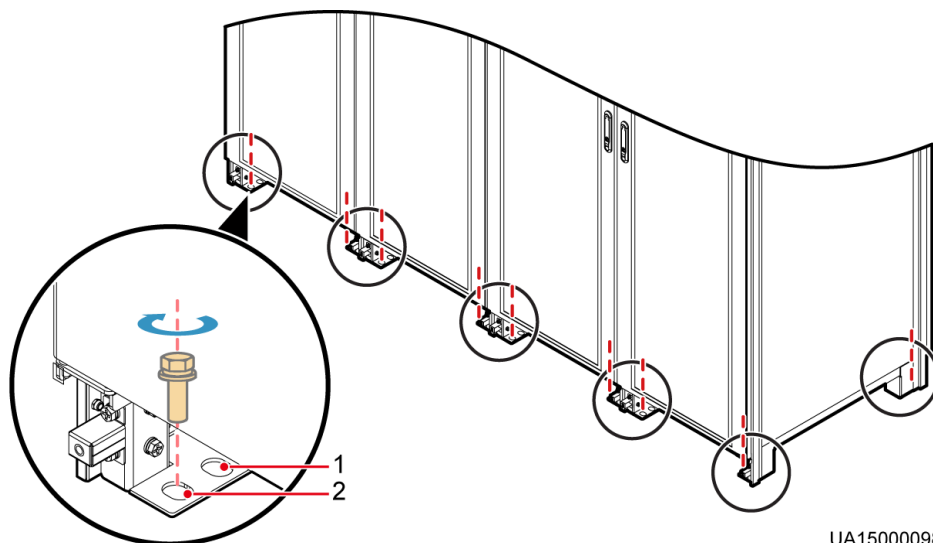


Step 3 Fix the system cabinet.

U-steel installation: M12×45 bolts. Move the cabinet to the installation position and place the bolt aligned with the hole.

Ground installation: M12×60 expansion bolts. Move the cabinet to the installation position. Drill holes on the mounting holes locations of the expansion bolts with percussion drill and place the expansion bolts aligned with on the holes, as shown in Figure 2-19.

Figure 2-19 Install the fixing bolts



UA15000098

1 Ground installation holes positions

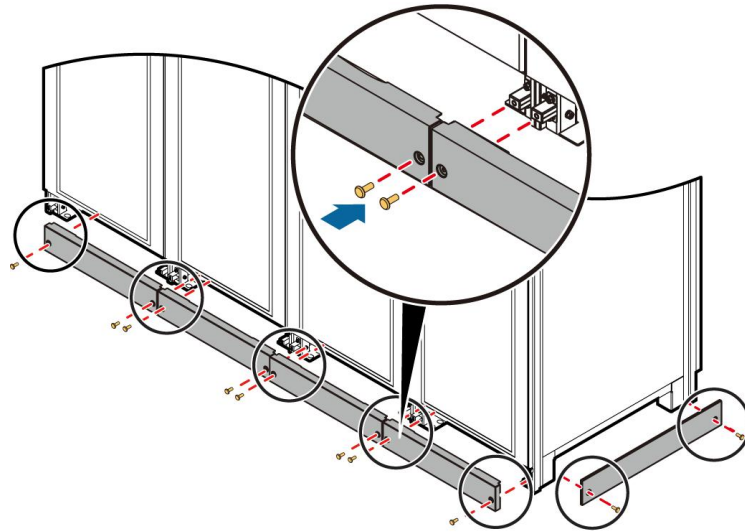
2 U-steel installation holes positions

 NOTICE

Knock the expansion bolts into the holes until the expansion sleeve completely fit into the holes. The expansion tubes must be completely buried under the ground to facilitate subsequent installation.

Install front and back anchor plates and side anchor plates, as shown in Figure 2-20.

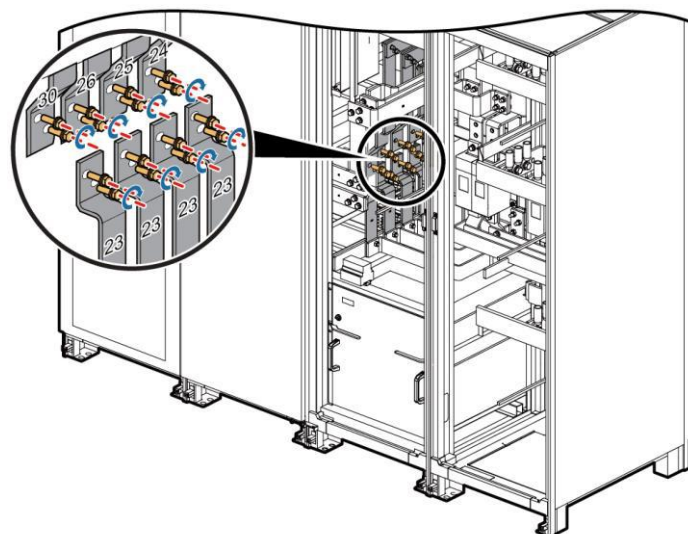
Figure 2-20 Install front and back anchor plates



Step 3 Install copper bar.

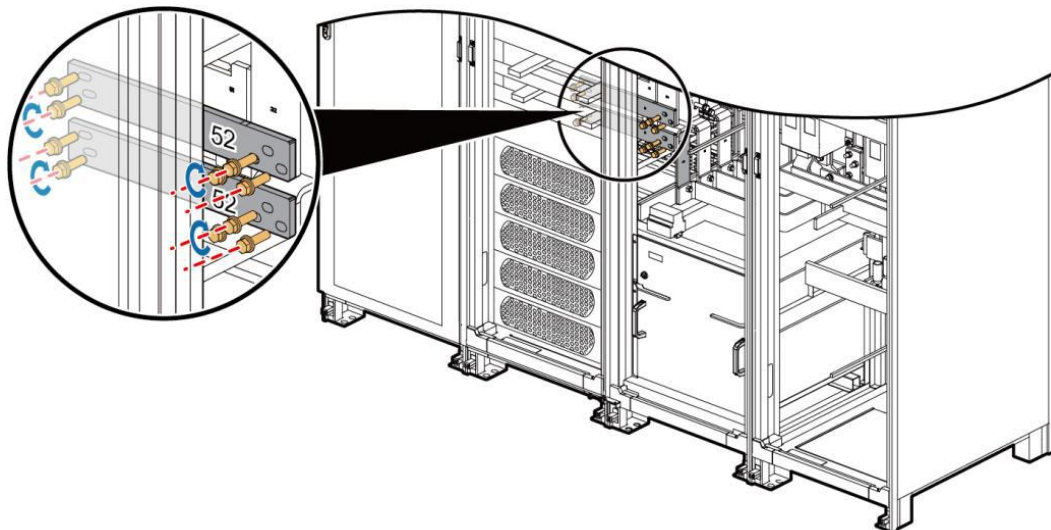
- 1 Remove the front power distribution cover of the bypass cabinet, remove the bypass cabinet and the rear cover of the adjacent power cabinet.
- 2 Cut off the cable ties between the copper bar holes of number 23, 24, 25, 26, 30, connect the connection copper bars between the bypass cabinet and the adjacent power cabinet: the soft copper bars of number 23, 24, 25, 26, 30 from the inside to the outside, as shown in Figure 2-21.

Figure 2-21 Install the connection copper bar 1 between bypass cabinet and adjacent power cabinet



3 Remove the filler panel of the power panel and the soft copper bar with the installation number of 52, as shown in Figure 2-22.

Figure 2-22 Install the connection copper bar 2 between bypass cabinet and adjacent power cabinet



4 Insert the cable terminals on the bypass cabinet into the corresponding ports of the parallel panel on the power cabinet, the bypass cabinet cables are shown in Table 2-8. The parallel panel is located on the rear of the power cabinet adjacent to the bypass cabinet, which can be seen after removing the rear cover, as shown in Figure 2-23 and Figure 2-24.

Table 2-8 The corresponding table of bypass cabinet cables and the interfaces of power cabinet 1 system signal interface panel

Cable name of bypass cabinet side	Cable label or serial number of bypass cabinet side	Silk screen or cable number of power cabinet parallel panel interface	Quantity
Bypass module DL37 cable	W301_J21	J21	1
	W303_J24	J24	1
ECM 8pin cable	W305_J22	J22	1
ECM system monitoring bus	W305_J25	J22	1
CT cable	W305_J26	J22	1
Switching cable	04091625-06	04091626-23	1

Figure 2-23 Signal transfer board silk screen of 800 kVA UPS

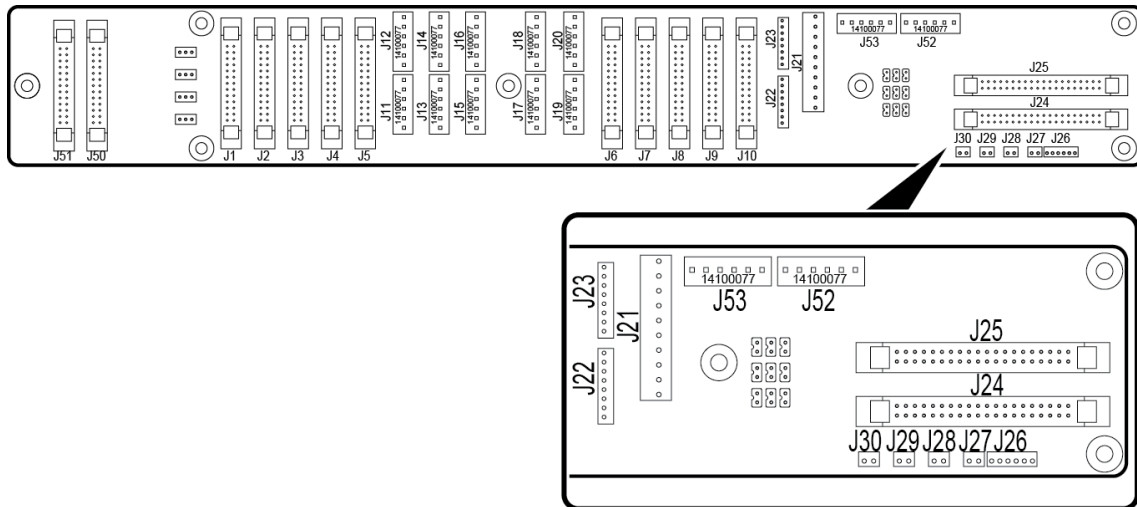
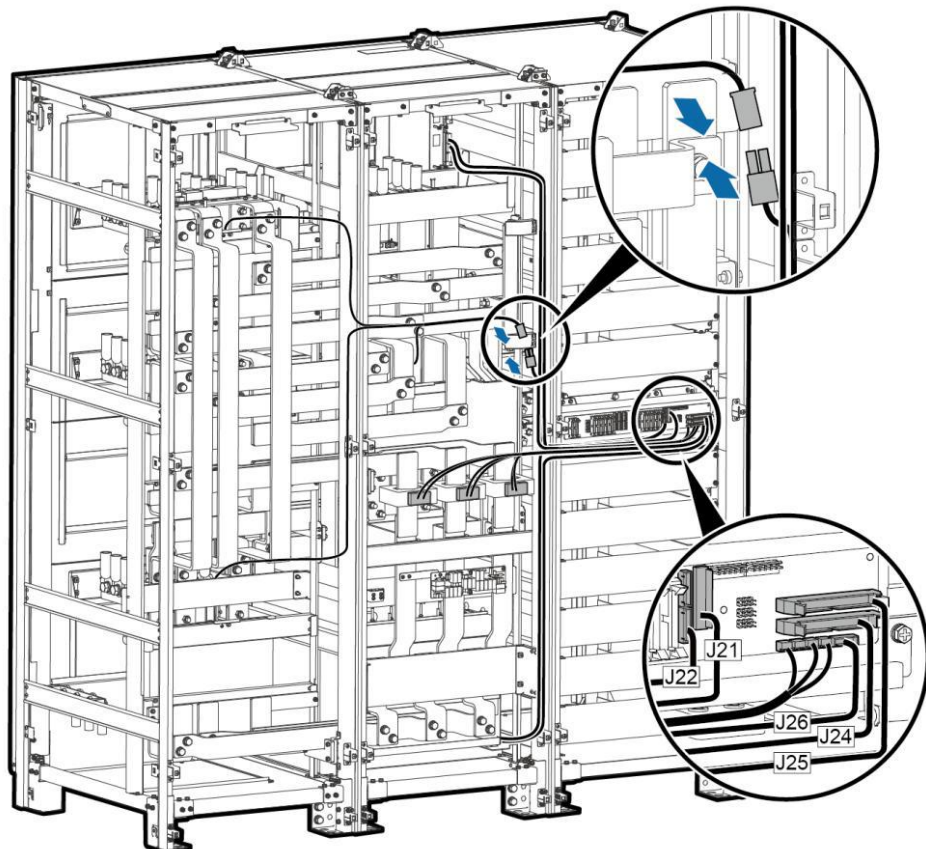


Figure 2-24 Parallel control signal terminal connection diagram of 800 kVA UPS



2.2.2 Routing Cables

2.2.2.1 Top Cable Routing

Context



NOTICE

- Top cable routing is recommended. Bottom cable routing is applicable only when a cable tray or support is used.
 - If you choose to route cables through holes, remove the power cable tray cover, spare power cable tray cover and battery cable tray cover and drill holes. After you drill holes, paste grommet strip to the hole edge to protect cables. Reinstall the covers on the cabinet.
 - After routing cables, use fireproof mud to fill in the gap between the cables and the cabinet.
-

Procedure

Step 1 Open the front door of the bypass cabinet, and remove power distribution covers from the bypass cabinet. Multiple modes are as shown in Figure 2-25, Figure 2-26 and Figure 2-27.

Figure 2-25 Remove the top tray cover (200 kVA/300 kVA)

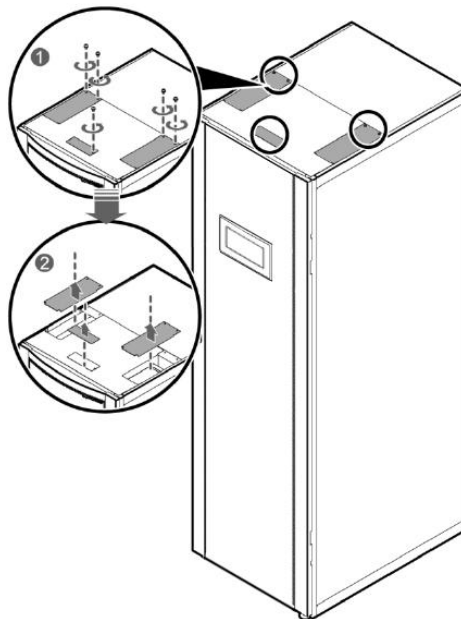


Figure 2-26 Remove the front power distribution cover and top tray cover (400 kVA/500 kVA/600 kVA)

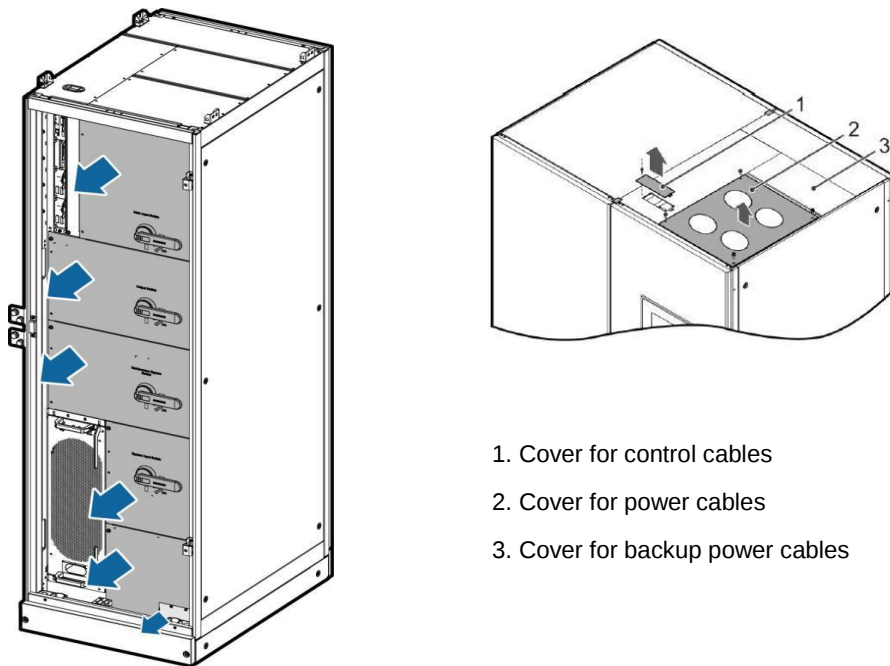
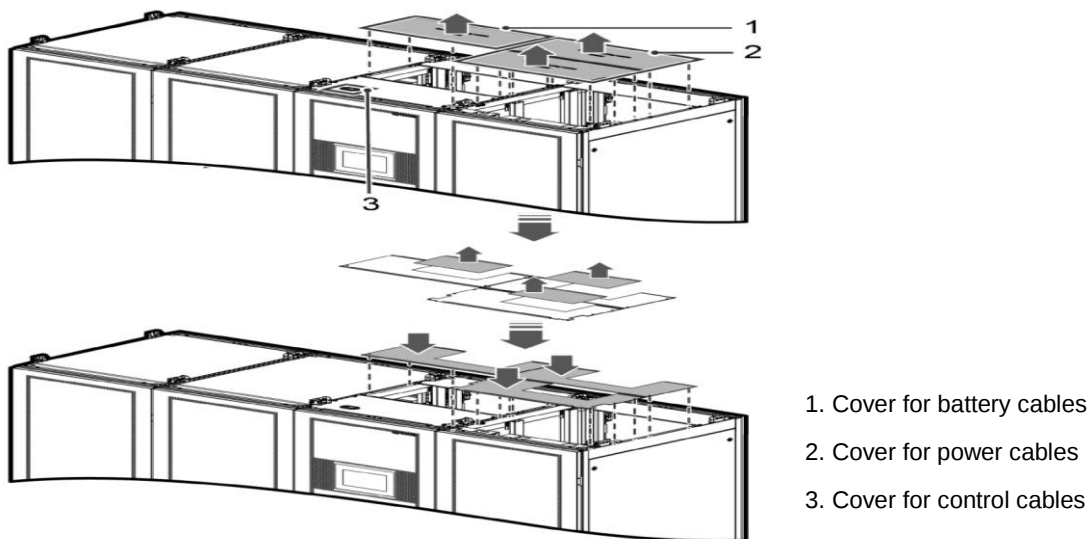


Figure 2-27 Remove the top tray cover (800 kVA)



Step 2 Route control cables



NOTICE

- Connect cables from top to bottom in this sequence: mains input power cables, output power cables, bypass input power cables, and battery input cables.
- When you connect each phase wire, tighten screws from inside to outside to secure wires.

Remove the power cable tray cover, battery cable tray cover and signal cable tray cover from the top of the cabinet. Use a hole saw to drill holes in the power cable tray cover, attach grommet strips around the holes to protect cables, and reinstall the power cable tray cover on the cabinet.

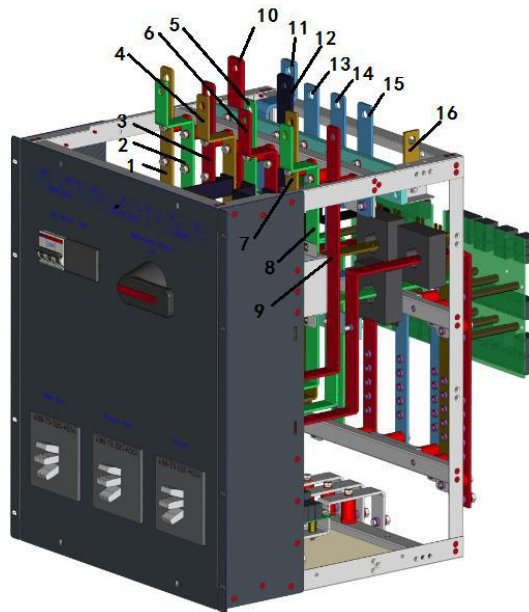


NOTE

- The hole size and quantity are for reference only.
- The mains input, bypass input, output, and battery cables should each be routed through a hole.

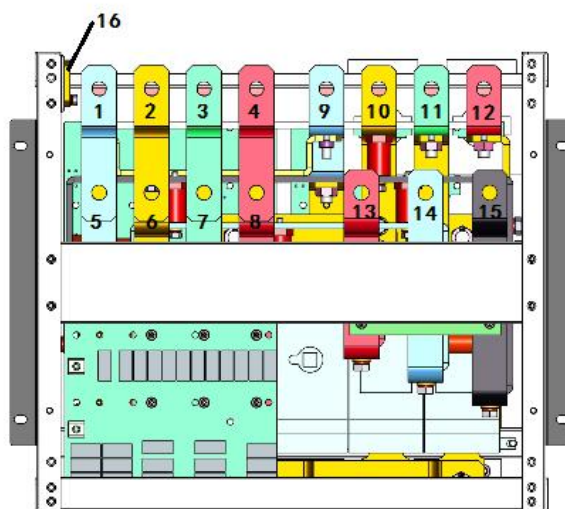
Figure 2-28, Figure 2-29, Figure 2-30 and Figure 2-31 show the power cables routed from the top of the cabinet.

Figure 2-28 Routing power cables at the top of the cabinet (200 kVA)



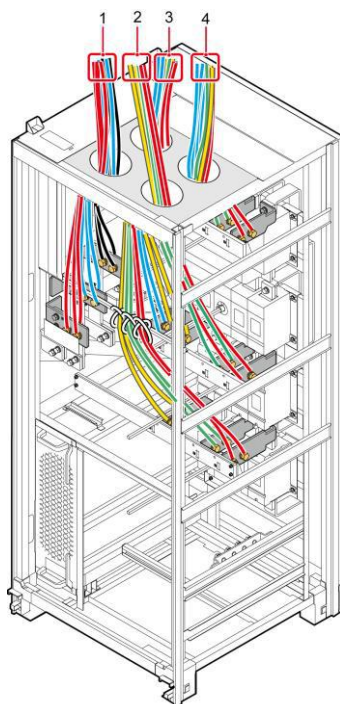
1 Mains input L1	2 Mains input L2	3 Mains input L3	4 Bypass input L1
5 Bypass input L2	6 Bypass input L3	7 Output U	8 Output V
9 Output W	10 Battery input positive pole	11 Battery input N	12 Battery input negative pole
13 Mains input N	14 Bypass input N	15 Output N	16 PE

Figure 2-29 Routing power cables at the top of the cabinet (300 kVA)



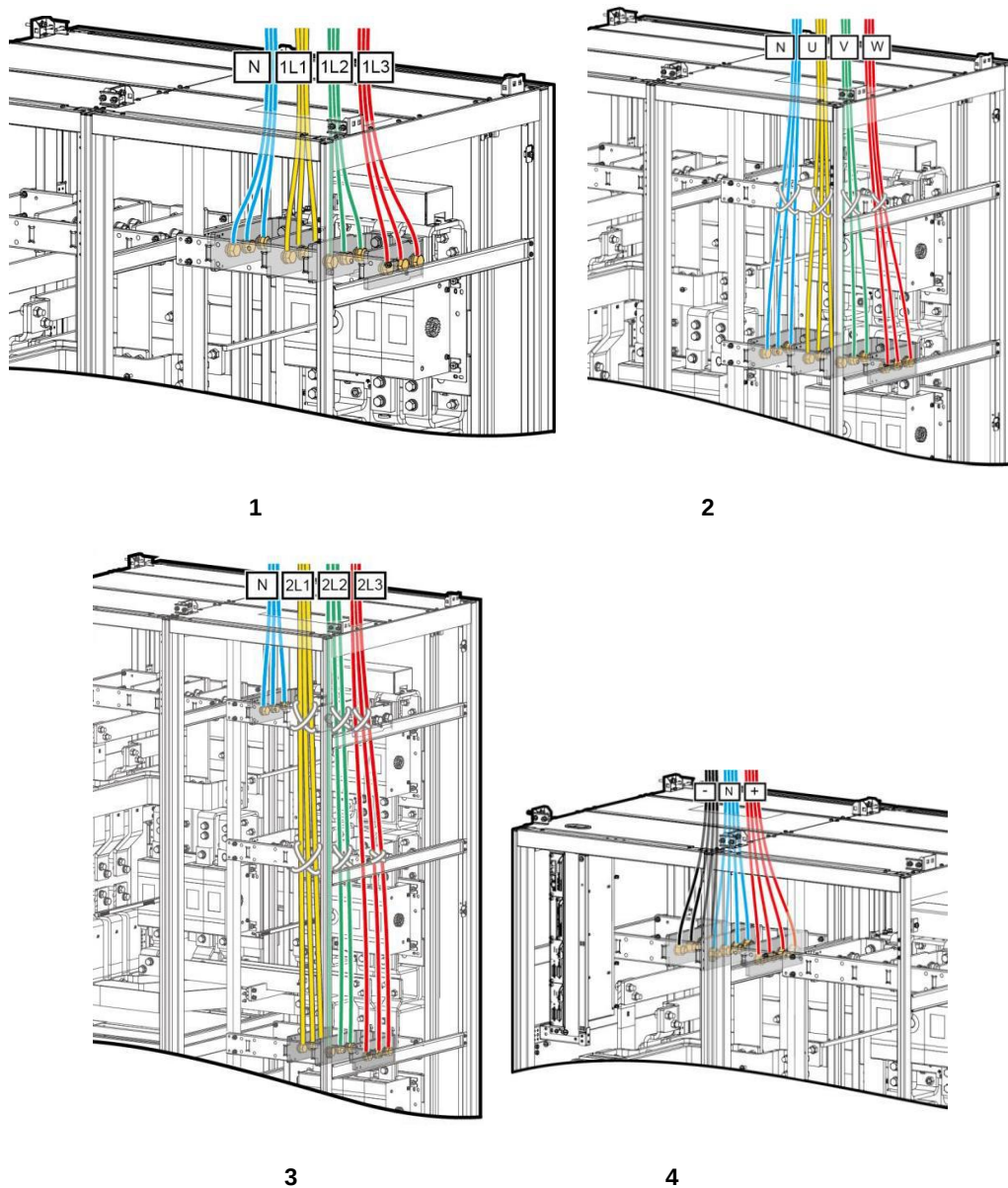
1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
5 Bypass input N	6 Bypass input L1	7 Bypass input L2	8 Bypass input L3
9 Output N	10 Output U	11 Output V	12 Output W
13 Battery input positive pole	14 Battery input N	15 Battery input negative pole	16 PE

Figure 2-30 Routing power cables from the top of the cabinet and binding positions (400 kVA/500 kVA/600 kVA)



1 Battery input cables	2 Output cables	3 Bypass input cables	4 Mains input cables
------------------------	-----------------	-----------------------	----------------------

Figure 2-31 Routing power cables from the top of the cabinet and binding positions (800 kVA)



1 Mains input cables	2 AC output cables	3 Bypass connection cables	4 Battery connection cables
----------------------	--------------------	----------------------------	-----------------------------

NOTICE

Bind signal cables and power cables separately.

Step3 Route control cables.

Bind control cables to the cabinet in the shortest route. 200 kVA/300 kVA UPS has separated operation method; 400 kVA/500 kVA/600 kVA/800 kVA UPS have the same operation method. Take 300 kVA, 500 kVA and 800 kVA UPSs as examples. Figure 2-32, Figure 2-33 and Figure 2-34 shows the control cables routed from the top of the cabinet.

Figure 2-32 Routing control cables from the top of the cabinet (300 kVA)

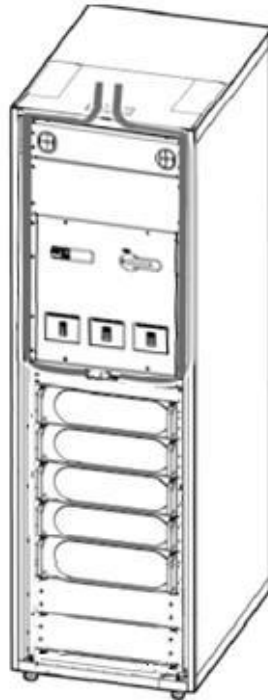


Figure 2-33 Routing control cables from the top of the cabinet (500 kVA)

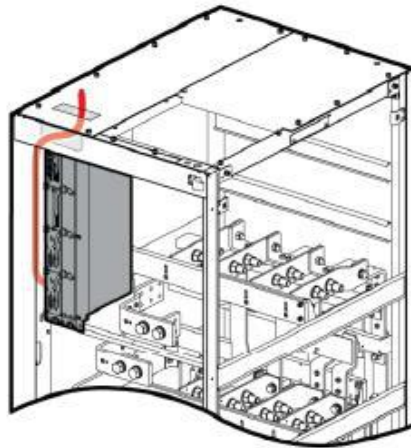
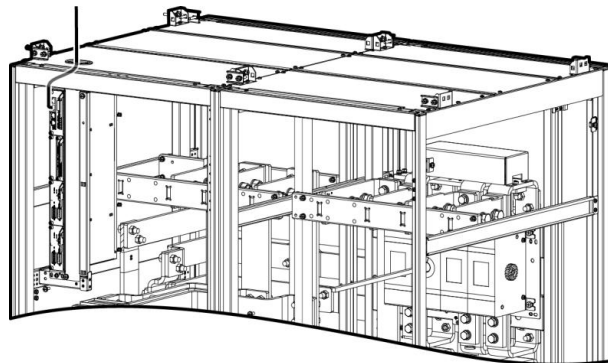


Figure 2-34 Routing control cables from the top of the cabinet (800 kVA)





NOTE

The number and colors of control cables shown in Figures are only for reference.

2.2.2.2 Bottom Cable Routing

Prerequisites



NOTICE

- If you choose to route cables from the bottom of the cabinet, ensure sufficient space at the bottom of the cabinet.
- If you choose to route cables through holes, remove power cable tray covers and drill holes. After you drill holes, paste grommet strip to the hole edge to protect cables. Reinstall the covers on the cabinet.
- After routing cables, use fireproof mud to fill in the gap between the cables and the cabinet.

Procedure

Step1 Open the front door, and remove the cover from the power distribution subrack, remove the power cable cover of cabinet bottom and control cable cover from the cabinet, as shown in Figure 2-35 and Figure 2-36.

Figure 2-35 Removing the power distribution covers (300 kVA)

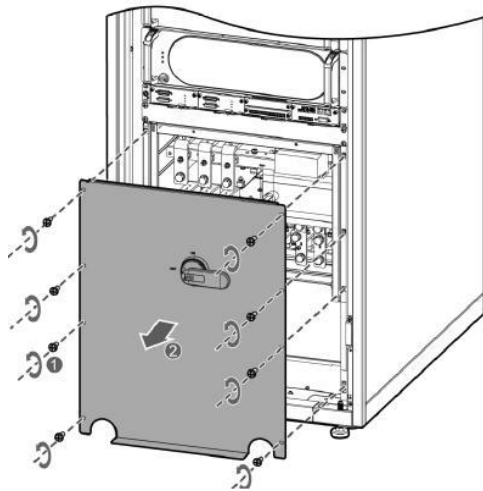
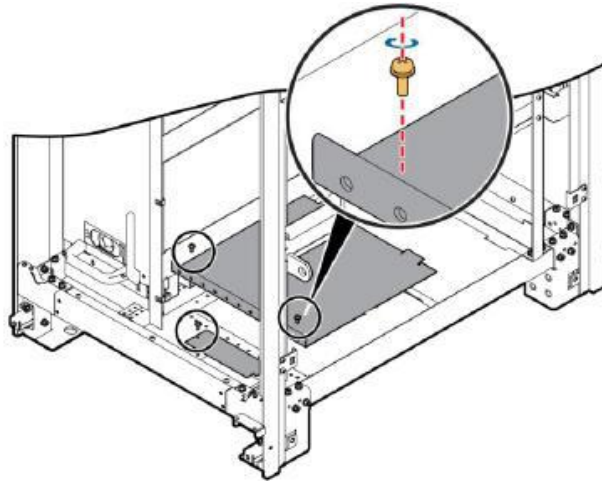


Figure 2-36 Removing the bottom cable tray covers (500 kVA)



Step 2 Route power cables.

 NOTICE

- Connect cables from top to bottom in this sequence: mains input power cables, output power cables, bypass input power cables and battery input cables.
- When you connect each phase wire, tighten screws from inside to outside to secure wires.

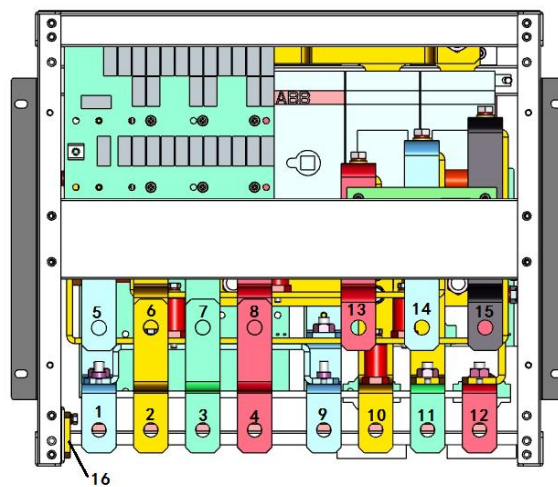
 NOTE

- The hole size and quantity are for reference only.
- The mains input, bypass input, output, and battery cables should each be routed through a hole.

- Routing power cable from the bottom of the cabinet is as shown in Figure 2-37, Figure 2-38 and Figure 2-39.

-300 kVA UPS power cable routing diagram is shown as follows.

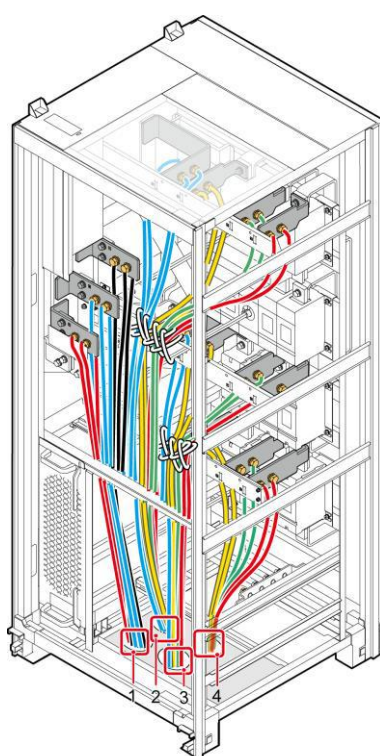
Figure 2-37 Routing power cables from the bottom of the cabinet (300 kVA bottom cable entry)



1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
5 Bypass input N	6 Bypass input L1	7 Bypass input L2	8 Bypass input L3
9 Output N	10 Output U	11 Output V	12 Output W
13 Battery input positive pole	14 Battery input N	15 Battery input negative pole	16 PE

- 400 kVA/500 kVA/600 kVA UPSs have same wiring methods, take 500 kVA UPS as an example.

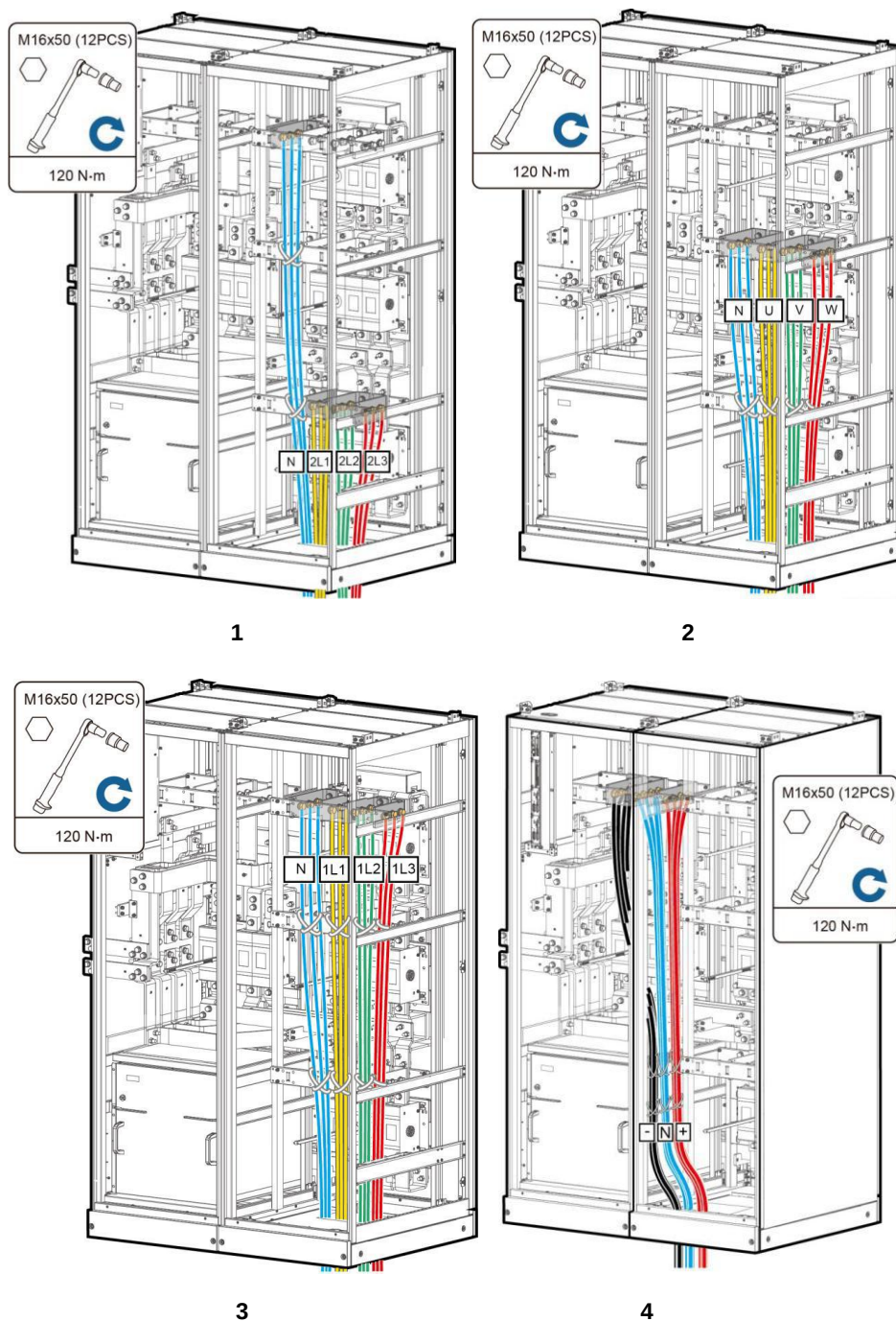
Figure 2-38 Routing power cables from the bottom of the cabinet and bonding positions (500 kVA)



1 Battery input cables	2 Mains input cables	3 Output cables	4 Bypass input cables
------------------------	----------------------	-----------------	-----------------------

- 800 kVA UPS power cable routing diagram is shown as follows.

Figure 2-39 Routing power cables from the bottom of the cabinet and bonding positions (800 kVA)



1 Bypass connection cables	2 Output connection cables	3 Mains input cables	4 Battery connection cables
----------------------------	----------------------------	----------------------	-----------------------------



NOTE

The number and colors of control cables in Figures are only for reference.

Step 3 Rout control cable.

Bind control cables to the cabinet in the shortest route. Routing control cables from the bottom of the cabinet are shown in Figure 2-40 and Figure 2-41.

Figure 2-40 Routing control cables from the bottom of the cabinet (300 kVA bottom cable entry)

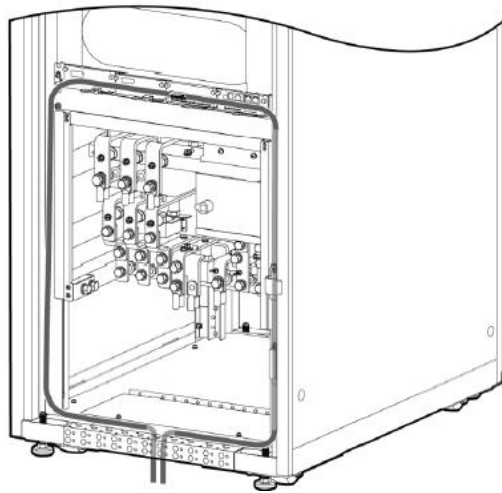
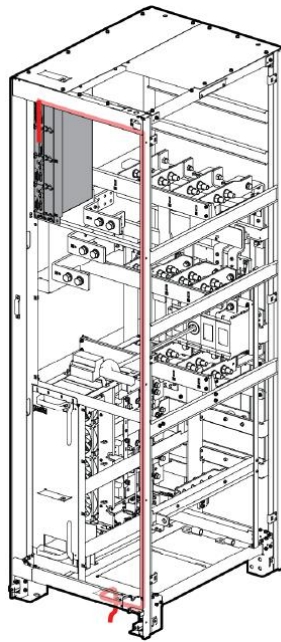


Figure 2-41 Routing control cables from the bottom of the cabinet (500 kVA)



2.2.3 Connecting Ground Cables



CAUTION

If you do not ground the UPS as required, electromagnetic interference, electric shocks, or fire disasters may occur.



NOTICE

- Before cable connections, ensure that all UPS input switches are OFF. Paste warning labels to prevent operation on the switches.
- Connect input power cables to the UPS and then to customer equipment.

- The figure is for reference only. For details about the recommended cross-sectional area and number of ground cables, refer to Table 2-3 and site requirements.
- In the case of top cable routing, the ground cable is routed from the top.

Connect the ground cable of the UPS; take 200 kVA and 500 kVA UPSs as examples, as shown in Figure 2-42 and Figure 2-43.

Figure 2-42 Grounding (200 kVA)

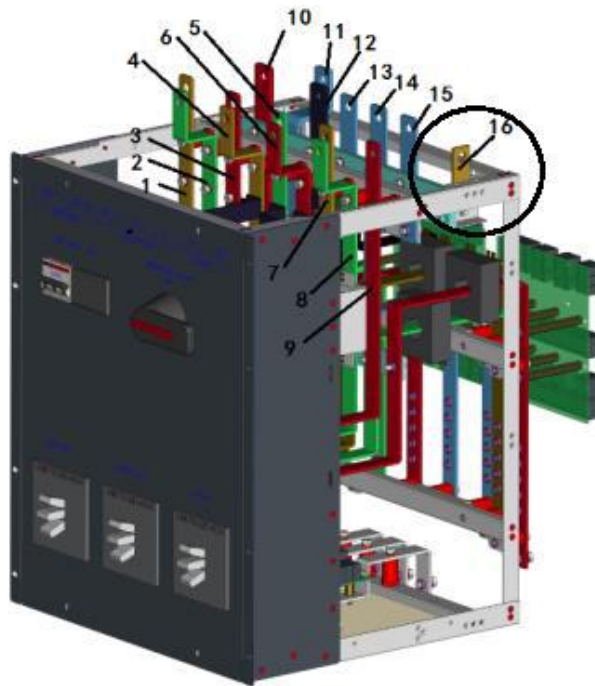
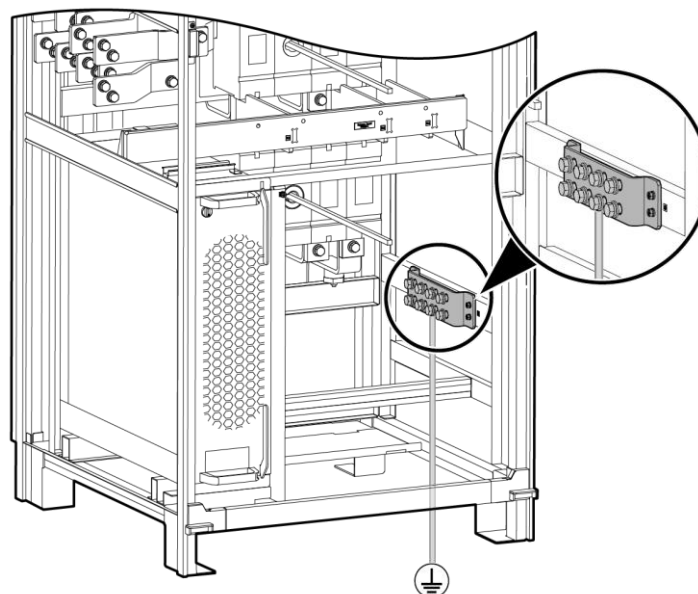


Figure 2-43 Grounding (500 kVA)



2.2.4 Connecting AC Input Power Cables

2.2.4.1 Single Mains

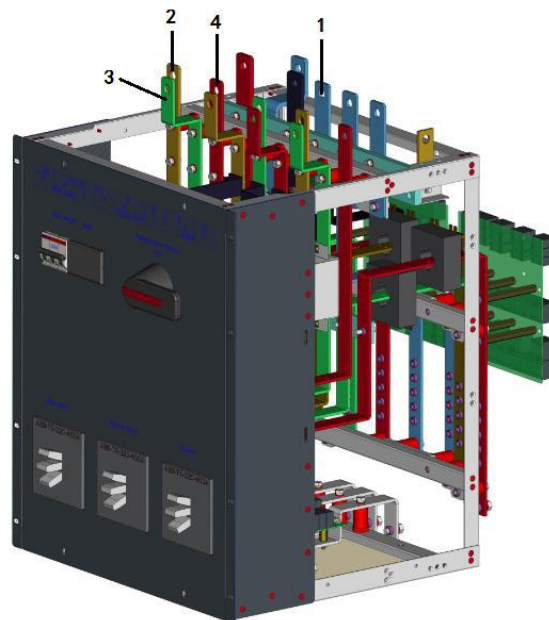


NOTICE

- This figure is for reference only. For details about recommended cable specifications and numbers, see Table 2-3. Select and install cables based on site requirements.
- After connecting cables, check that a certain clearance is reserved between the internal switch (if any) extension pole and power cables to avoid friction.

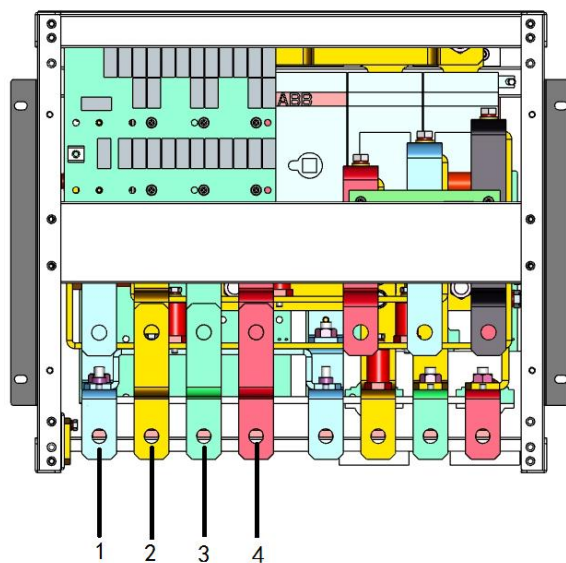
Connecting AC input power cables to mains input power distribution terminals 1L1, 1L2, 1L3 and N, as shown in Figure 2-44, Figure 2-45, Figure 2-46, Figure 2-47 and Figure 2-48.

Figure 2-44 Connecting AC input cables (200 kVA)



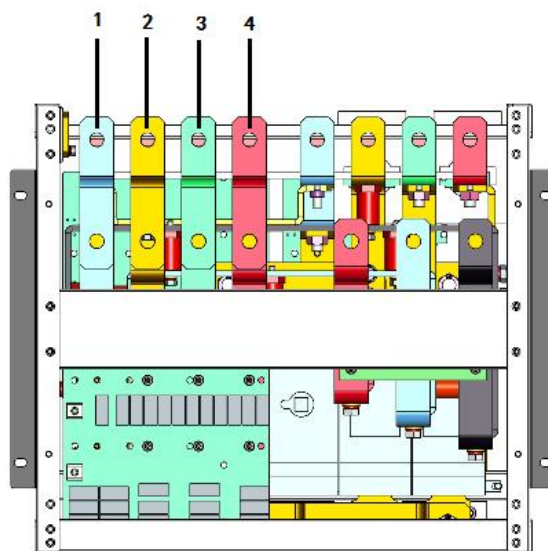
1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
-----------------	------------------	------------------	------------------

Figure 2-45 Connecting AC input cables (300 kVA bottom cable entry)



1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
-----------------	------------------	------------------	------------------

Figure 2-46 Connecting AC input cables (300 kVA top cable entry)



1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
-----------------	------------------	------------------	------------------

Figure 2-47 Connecting AC input cables (400 kVA/500 kVA/600 kVA)

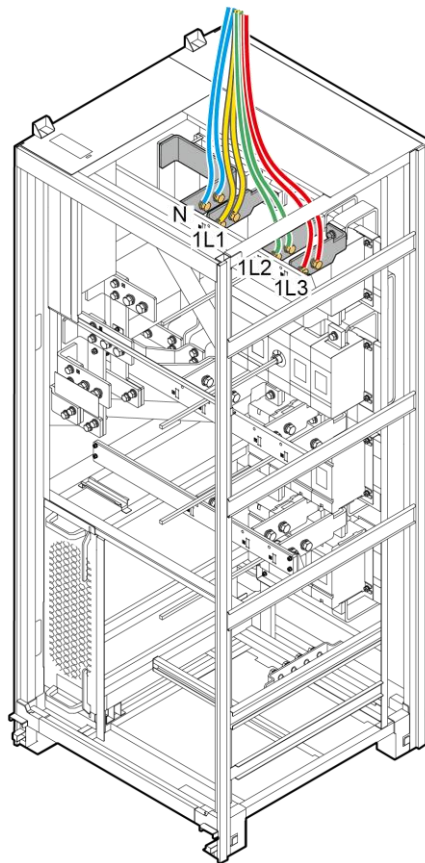
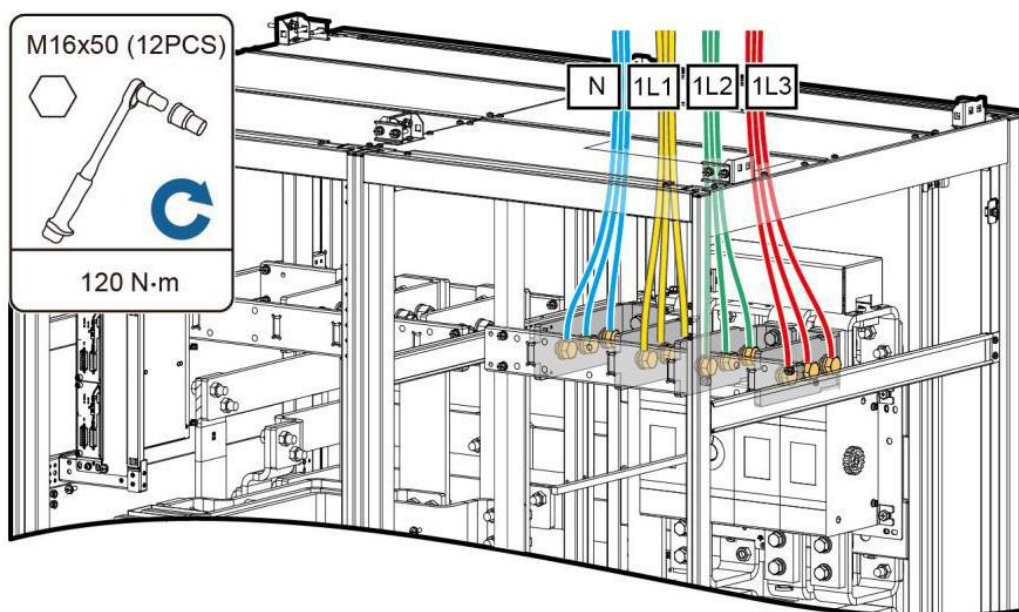


Figure 2-48 Connecting AC input cables (800 kVA)



2.2.4.2 Dual Mains

Procedure

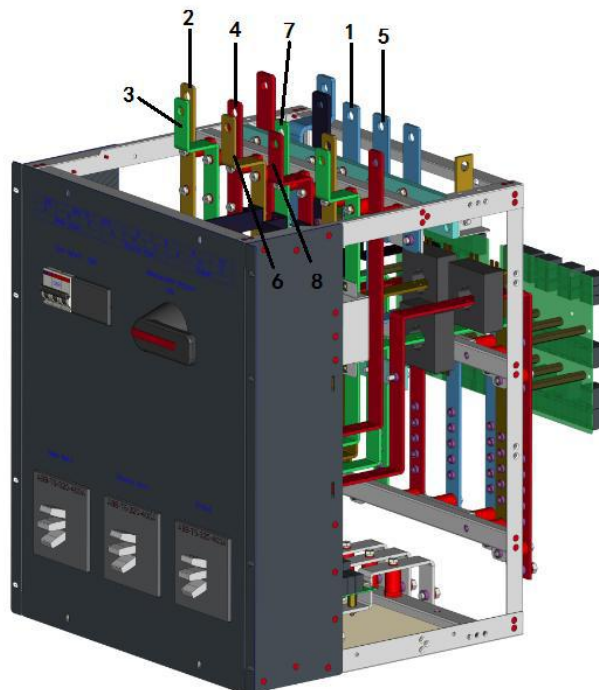
Step 1 Remove the UPS power panel or bypass real panel, and then remove the connecting copper bars of mains and bypass.

NOTE

It is recommended that you remove the side panel from the bypass cabinet before connecting cables.

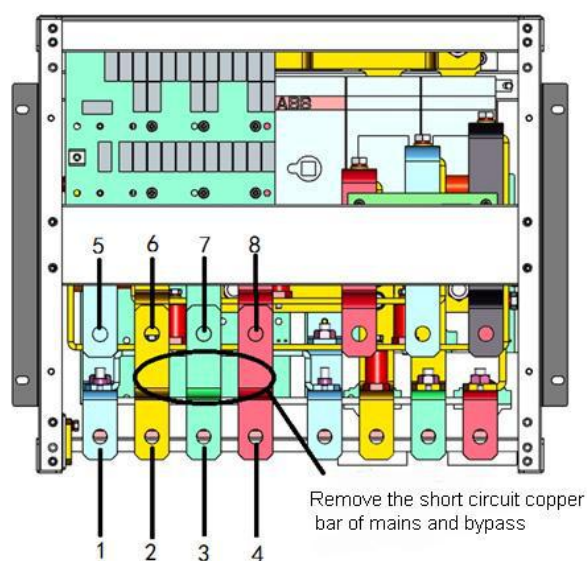
Remove the connection copper bars of the mains and bypass from 200 kVA/300 kVA UPS, and then connect mains cable and bypass cable separately, as shown in Figure 2-49, Figure 2-50 and Figure 2-51. Keep the removed copper bars and bolts properly.

Figure 2-49 Dual mains connection diagram (200 kVA)



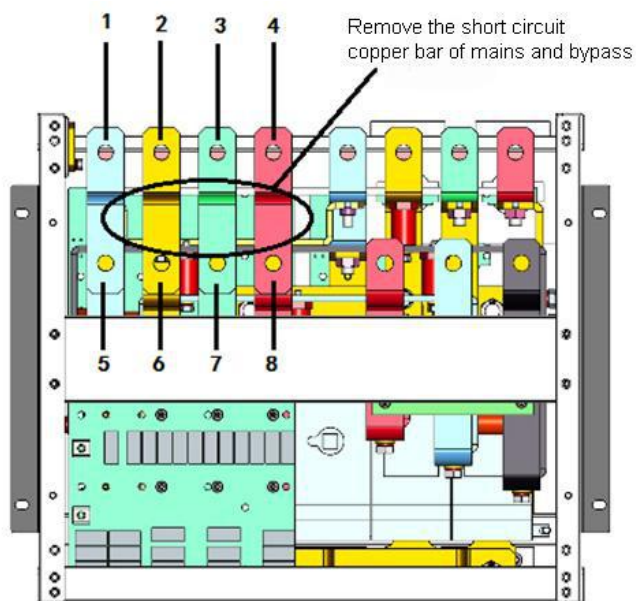
1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
5 Bypass input N	6 Bypass input L1	7 Bypass input L2	8 Bypass input L3

Figure 2-50 Dual mains connection diagram (300 kVA bottom cable entry)



1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
5 Bypass input N	6 Bypass input L1	7 Bypass input L2	8 Bypass input L3

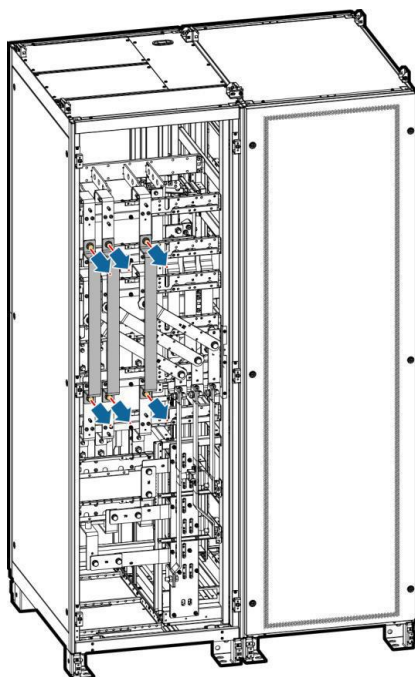
Figure 2-51 Dual mains connection diagram (300 kVA top cable entry)



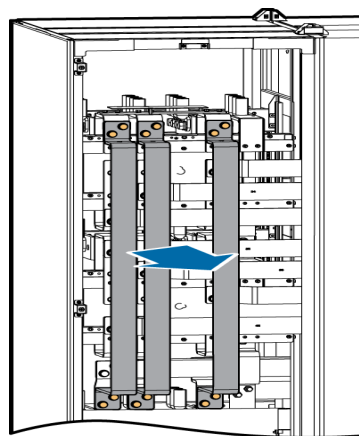
1 Mains input N	2 Mains input L1	3 Mains input L2	4 Mains input L3
5 Bypass input N	6 Bypass input L1	7 Bypass input L2	8 Bypass input L3

400 kVA/500 kVA/ 600 kVA/800 kVA UPSs have the similar structure, take 500 kVA and 800 kVA UPSs as examples. Remove the rear cover of the bypass cabinet, and then remove the connection copper bars of mains and bypass, as shown in Figure 2-52.

Figure 2-52 Remove the rear cover of the bypass cabinet and the connection copper bars of mains and bypass



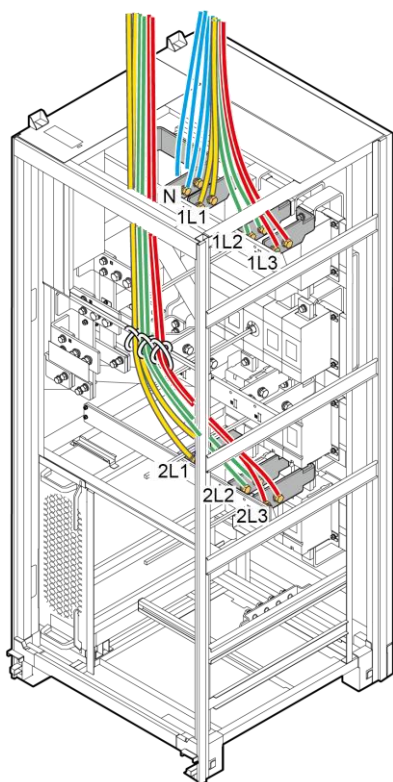
500 kVA



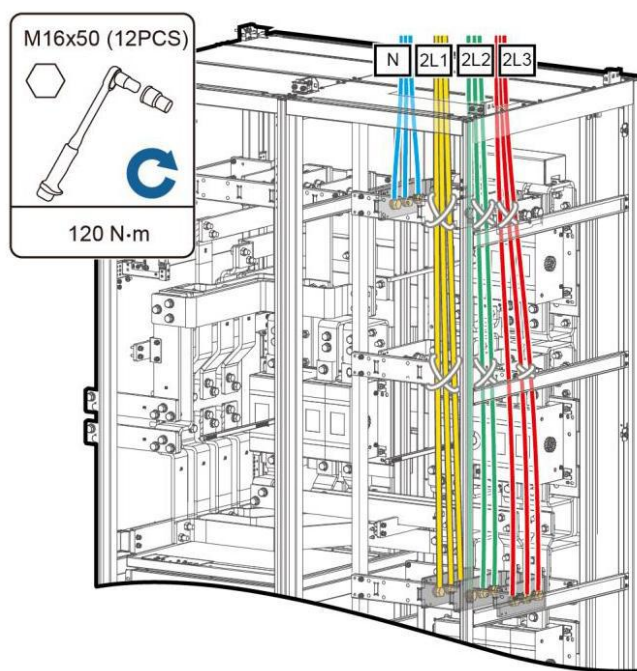
800 kVA

Remove the copper bars and bolts and keep them properly. Dual mains wiring method is shown in Figure 2-53.

Figure 2-53 Connecting AC input cables (500 kVA/800 kVA)



500 kVA



800 kVA

1 Mains input N	2 Mains input 1L1	3 Mains input 1L2	4 Mains input 1L3
5 Bypass input 2L1	6 Bypass input 2L2	7 Bypass input 2L3	

Step 2 Connect mains input power cables to mains input terminals 1L1, 1L2, and 1L3 respectively. Connect the neutral wires of mains and bypass input cable N to input power distribution N wiring terminals.

Step 3 Connect bypass input cables to bypass input terminals 2L1, 2L2, and 2L3.

Step 4 Reinstall power distribution cover or rear cover into the cabinet.

2.2.5 Connecting AC Output Power Cables



CAUTION

After you connect output power cables, if loads are not ready to be powered, insulate the end of the system output power cable.

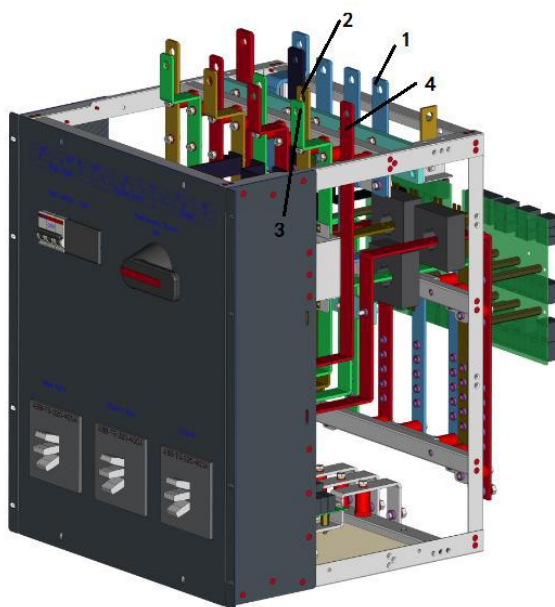


NOTICE

- The figure is for reference only. For details about the recommended cross-sectional area and number of AC output power cables, refer to Table 2-3 and site requirements.
- After connecting cables, check that a certain clearance is reserved between the internal switch (if any) extension pole and power cables to avoid friction.

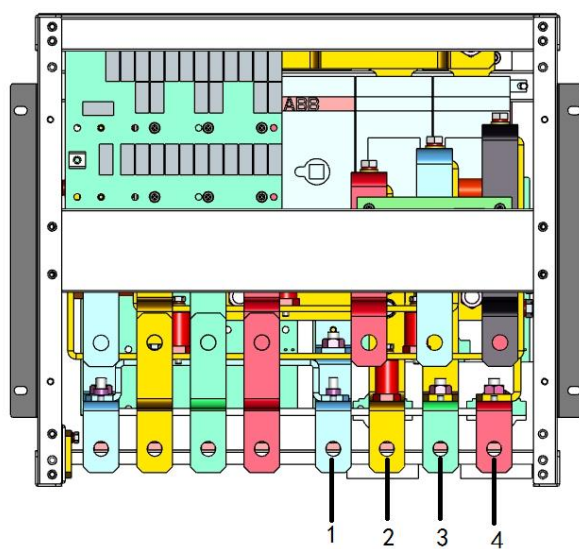
Connect the output power cables to output wiring terminals N, U, V, and W, as shown in Figure 2-54, Figure 2-55, Figure 2-56, Figure 2-57 and Figure 2-58.

Figure 2-54 Connecting AC output cables (200 kVA)



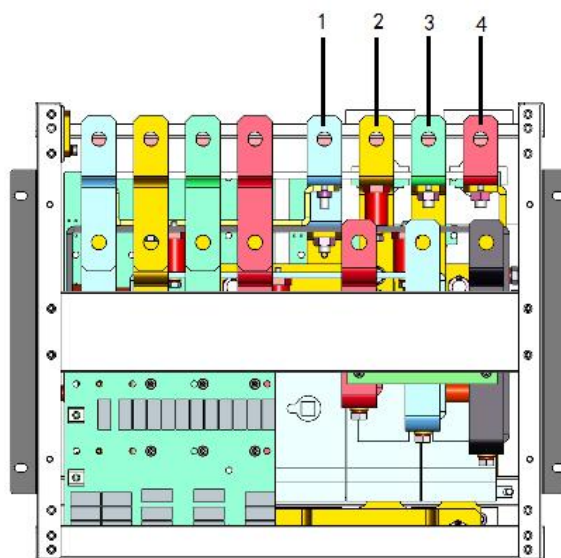
1 Output N	2 Output U	3 Output V	4 Output W
------------	------------	------------	------------

Figure 2-55 Connecting AC output cables (300 kVA bottom cable entry)



1 Output N	2 Output U	3 Output V	4 Output W
------------	------------	------------	------------

Figure 2-56 Connecting AC output cables (300 kVA top cable entry)



1 Output N	2 Output U	3 Output V	4 Output W
------------	------------	------------	------------

Figure 2-57 Connecting AC output cables (400 kVA/500 kVA/600 kVA)

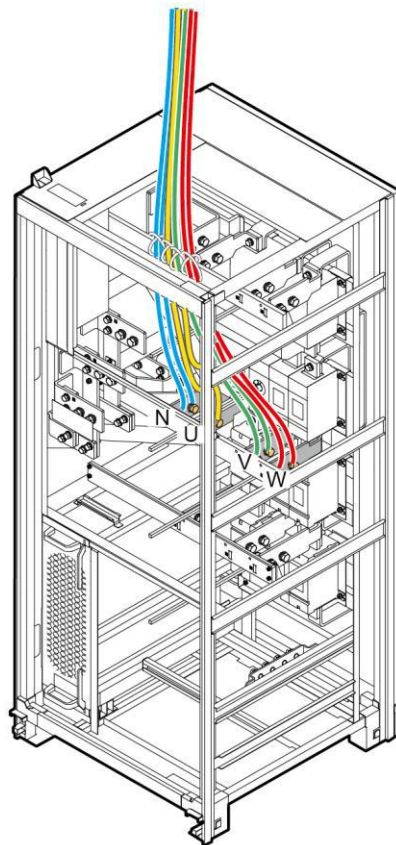
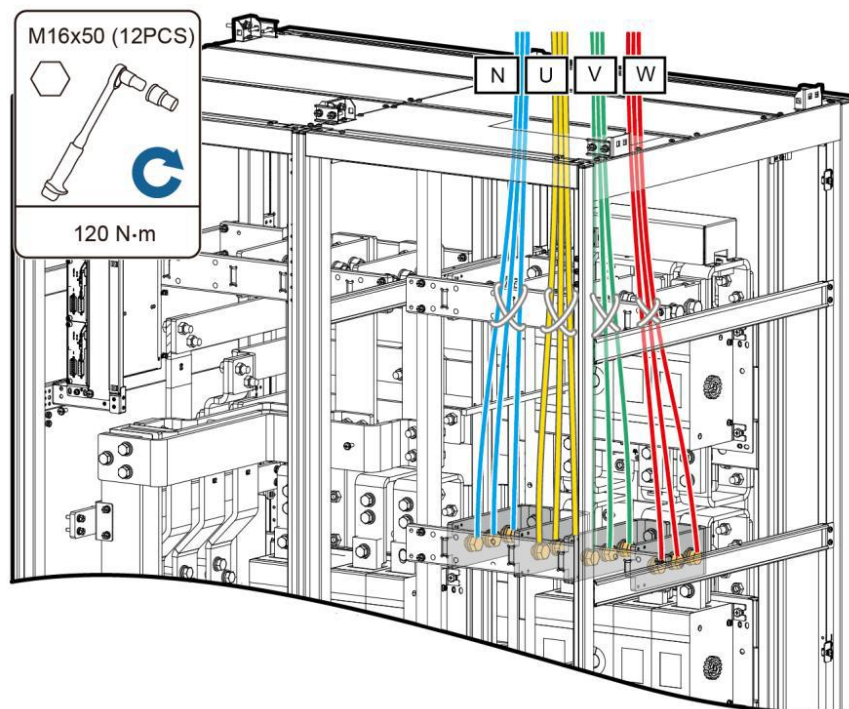


Figure 2-58 Connecting AC output cables (800 kVA)



2.2.6 Connecting Battery Cables

 DANGER

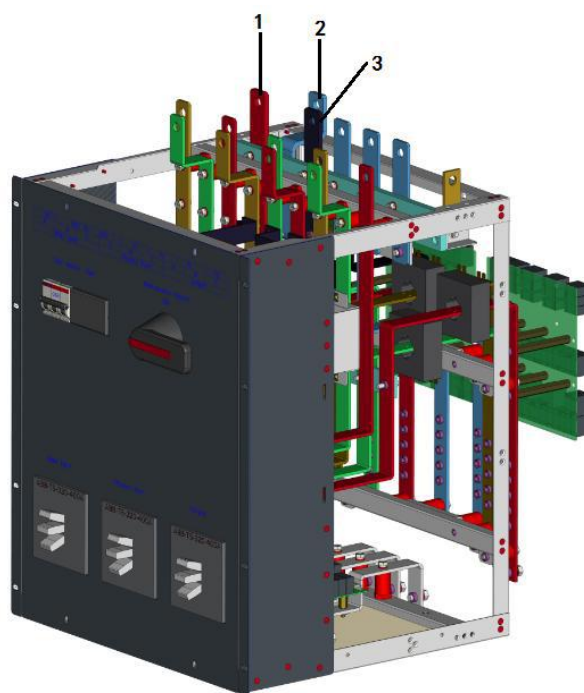
- The battery string voltage may cause serious injury. Observe safety precautions when connecting cables.
- Ensure that cables are correctly connected between battery strings and the battery switch, and between the battery switch and the UPS.

 NOTICE

For details about the recommended cross-sectional area and number of battery cables, refer to Table 2-3 and site requirements.

Connect the battery cables to battery power distribution wiring terminals +, N, and –, as shown in Figure 2-59, Figure 2-60, Figure 2-61, Figure 2-62 and Figure 2-63.

Figure 2-59 Connecting battery cables (200 kVA)



1 Battery input +	2 Battery input N	3 Battery input -
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Figure 2-60 Connecting battery cables (300 kVA bottom cable entry)

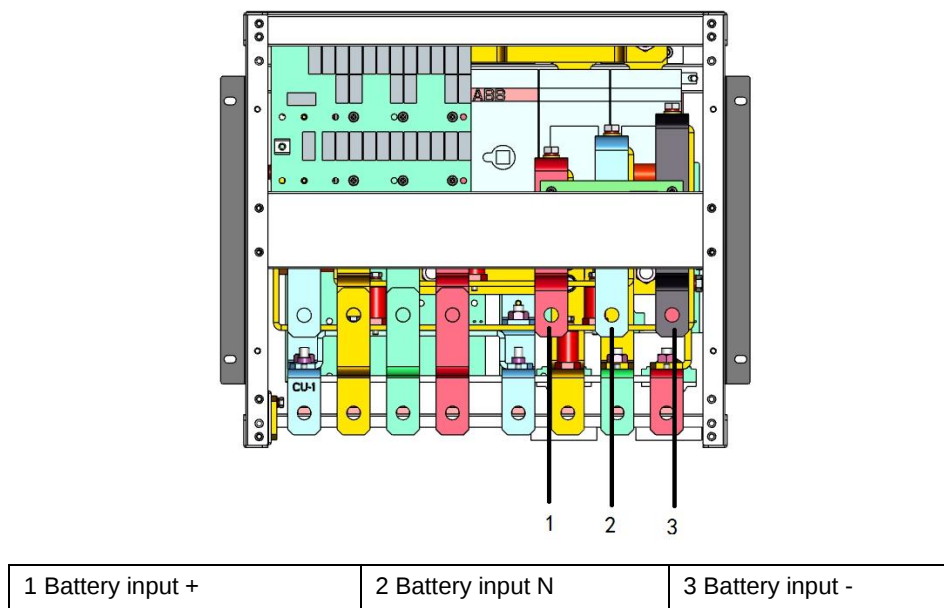


Figure 2-61 Connecting battery cables (300 kVA top cable entry)

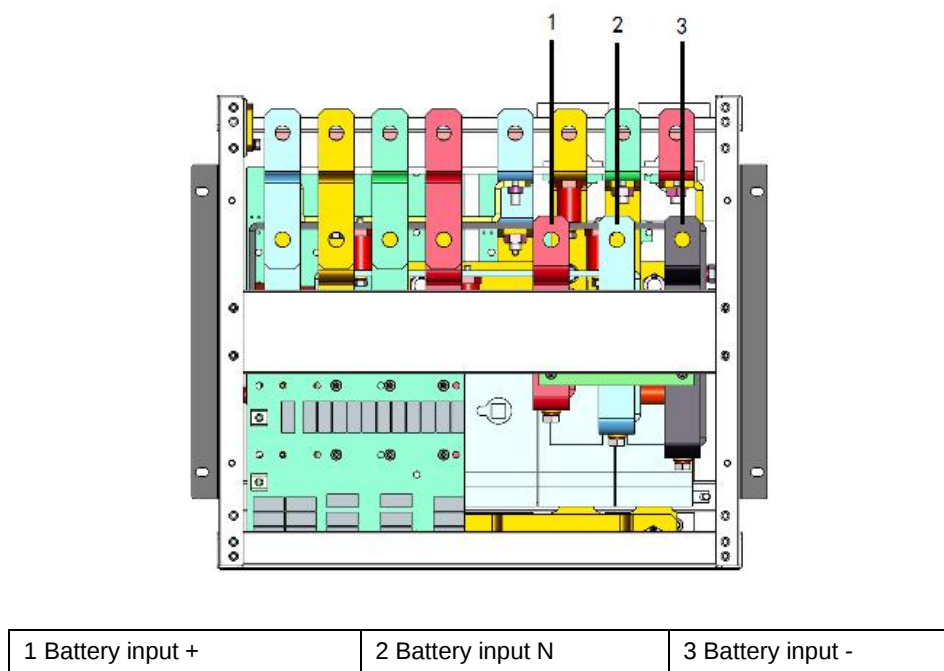


Figure 2-62 Connecting battery cables (400 kVA/500 kVA/600 kVA)

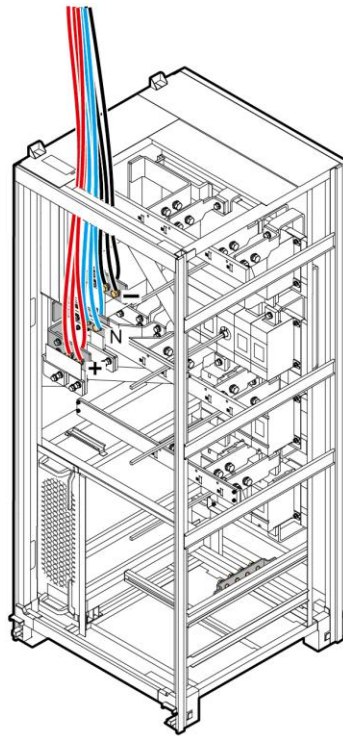
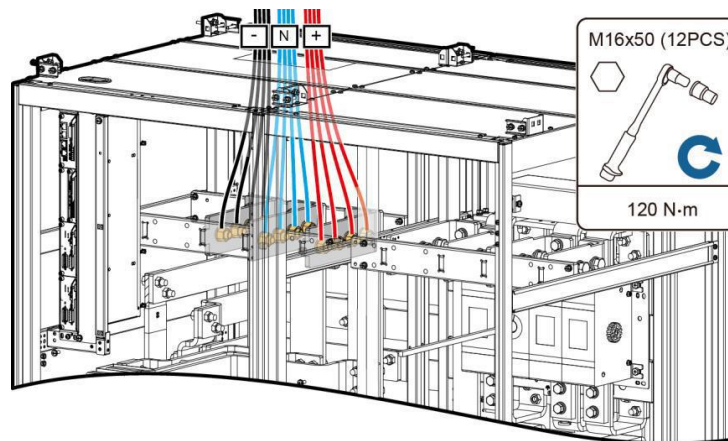


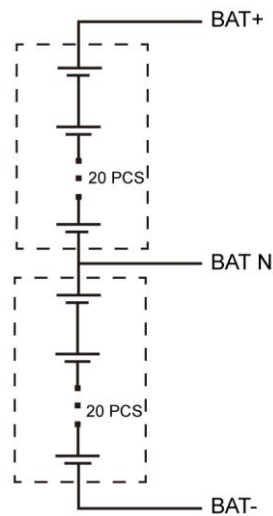
Figure 2-63 Connecting battery cables (800 kVA)



Route the battery neutral cable N from the middle connection point of the positive and negative battery strings.

Figure 2-64 shows a neutral cable routed from the middle of the two battery strings consisting of 40 batteries, half positive and half negative.

Figure 2-64 Neutral wire



NOTE

After you connect cables, reinstall the beam and switch extension poles (if removed), power distribution covers, and bypass cabinet side panel on the cabinet.

2.2.7 Remote EPO



NOTICE

- This company does not provide the EPO switch or cable. Prepare them by yourself. The recommended cable is 22 AWG.
- Equip the EPO switch with a protective cover to prevent misoperations, and cover the cable with protective tubing.
- Triggering EPO will shut down the rectifier, inverter, charger, and static bypass, but does not disconnect the UPS mains input. To power off the UPS completely, turn off the front-end input switch when you trigger EPO.

Connect the prepared EPO switch to UPS dry contacts. Figure 2-65 shows the cable connections for an NC EPO switch, Figure 2-66 shows the cable connections for an NO EPO switch.

Figure 2-65 Cable connection for an NC EPO switch

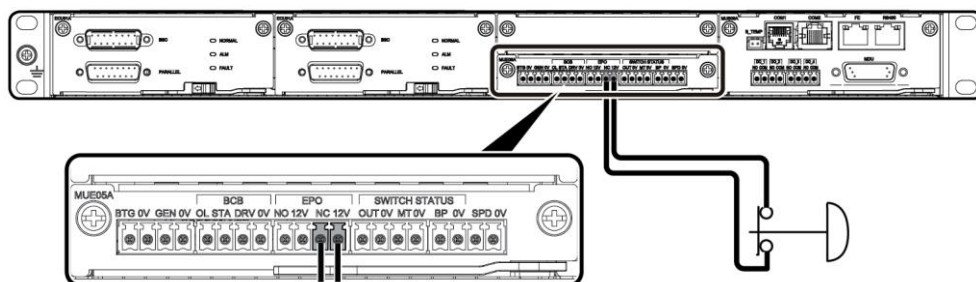
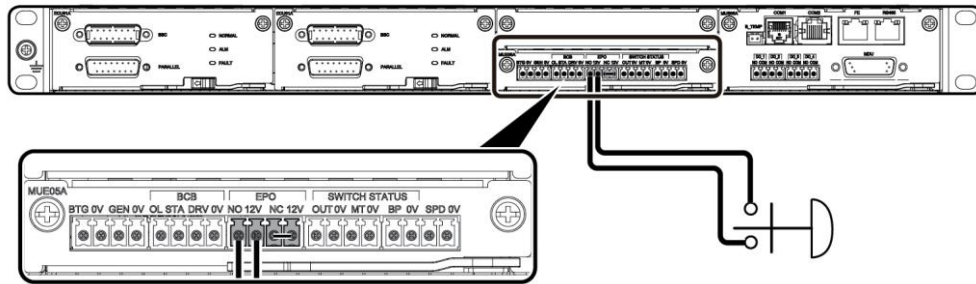


Figure 2-66 Cable connection for an NO EPO switch



NOTE

- When the EPO switch is in the NC state, remove the jumper between EPO_NC and EPO_12V before connection. When you turn off the EPO switch, EPO is triggered.
- When the EPO switch is in the NO state, ensure that the jumper is connected between EPO_NC and EPO_12V. When you turn on the EPO switch, EPO is triggered.

2.3 Parallel System Installation

2.3.1 Connecting Power Cables

Procedure

Step 1 Ground each single UPS. For details, see chapter 2.2.3 Connecting Ground Cables.

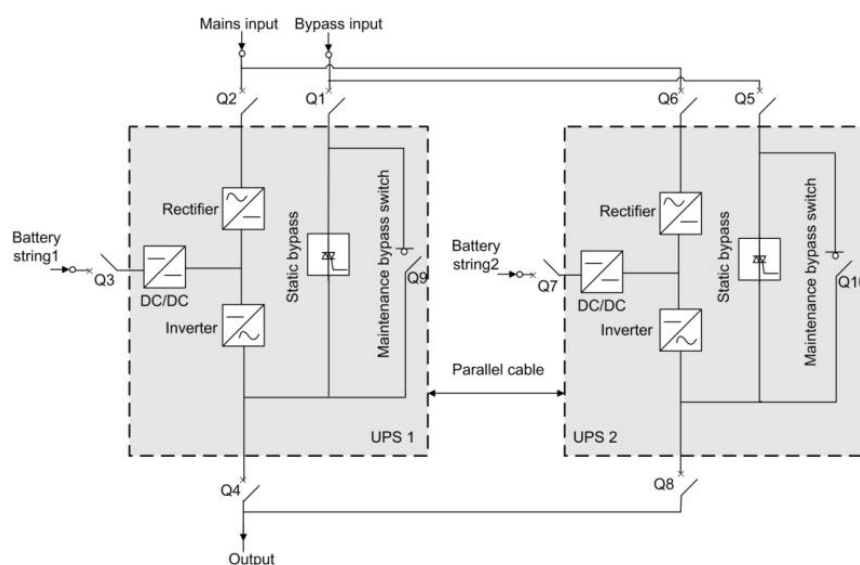
Step 2 Connect AC Input and output Power Cables. For details, see chapter 2.2.4 Connecting AC Input Power Cables and 2.2.5 Connecting AC Output Power Cables.

Step 3 Connect battery power cables of each UPS. For details, see chapter 2.2.6 Connecting Battery Cables.

Step 4 Choose a parallel mode and connect cables to the parallel system based on site requirements.

Figure 2-67 and Figure 2-68 show the typical conceptual diagram and cable connections for a 1+1 parallel system.

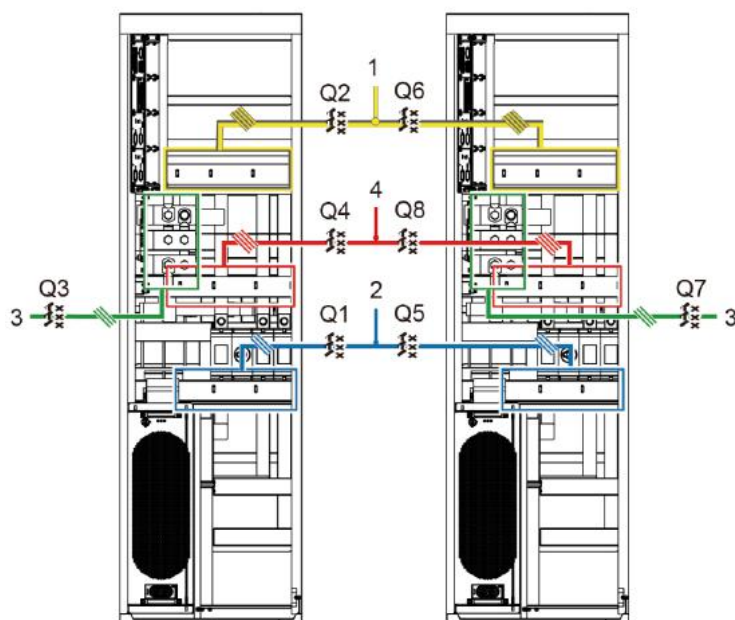
Figure 2-67 Conceptual diagram of a 1+1 parallel system



! NOTICE

- To clearly and simply show cable connections, this document uses “the number of oblique lines” to indicate the number of power cables of the same type.
- Connect power cables according to port silk screen.

Figure 2-68 Cable connections for a 1+1 parallel system (500 kVA)



1 Mains input cables	2 Bypass input cables	3 Battery cables	4 Output cables
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Take the dual-bus system as an example. The conceptual diagram and connection diagram of a dual-bus system are shown in Figure 2-69 and Figure 2-70 respectively.

! NOTICE

The specifications of power cables on each UPS should be the same to achieve current equalization in bypass mode. The power cables include bypass input power cables and UPS output power cables.

Figure 2-69 Conceptual diagram of a dual-bus system

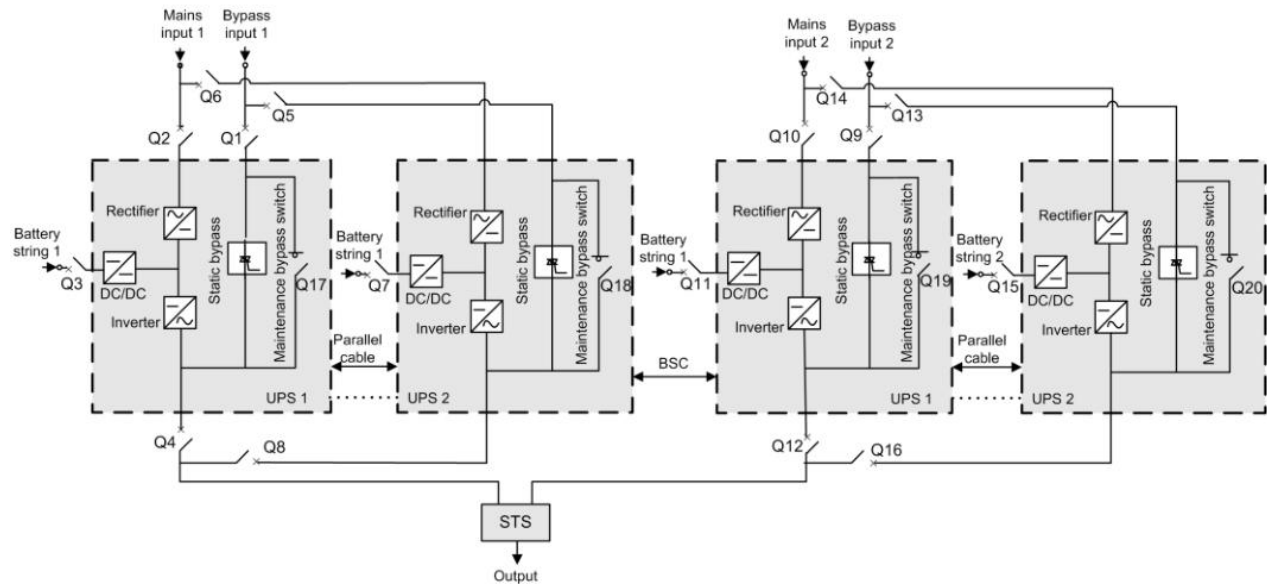
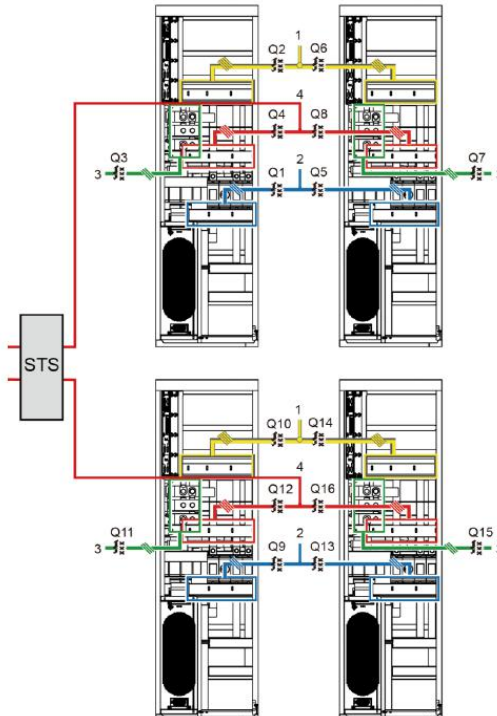


Figure 2-70 Connecting cables to a dual-bus system (500 kVA)



1 Mains input cables

2 Bypass input cables

3 Battery cables

4 Output cables

2.3.2 Connecting Control Cables

Connect the parallel ports on the single UPSs with parallel control cables to create a loop.

Figure 2-71 and Figure 2-72 show the wiring principle for an N+X parallel system.

Figure 2-71 Schematic diagram of an N+X parallel control cables

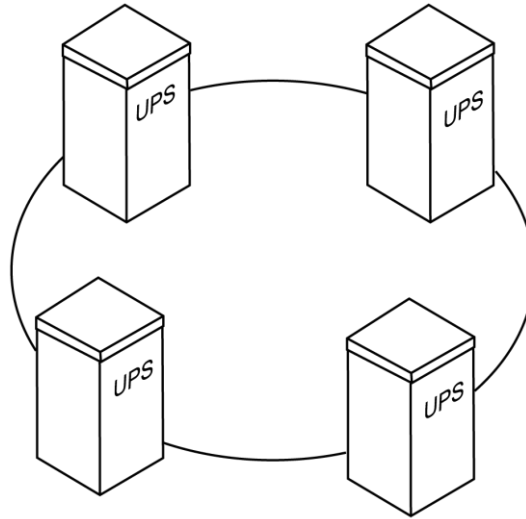
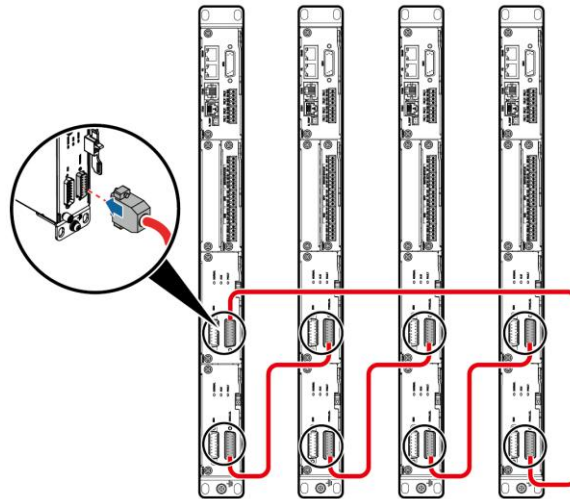


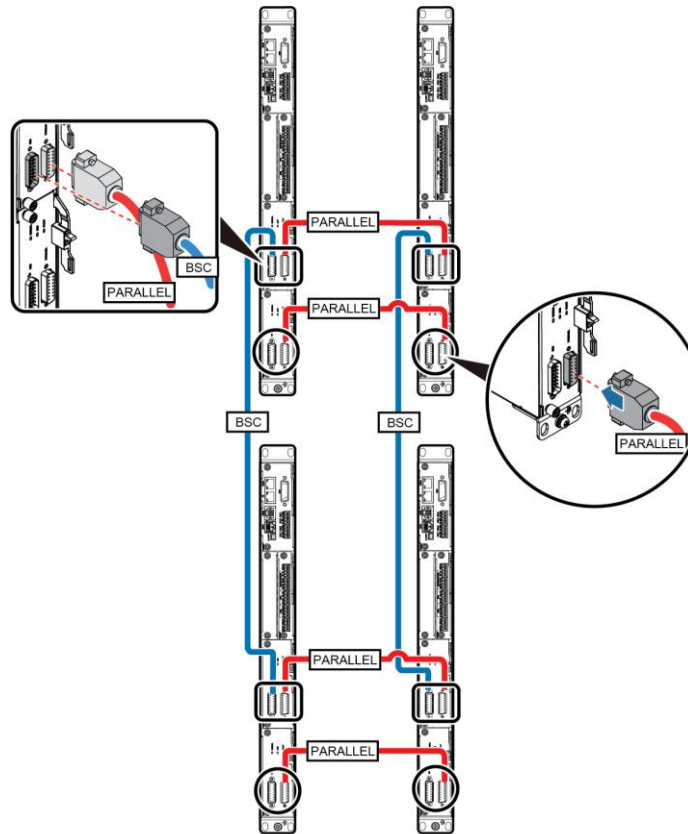
Figure 2-71 shows the control module only. The control module is the substitute of a single UPS.

Figure 2-72 Control cable connections of N+X parallel system



BSC master and slave cables are required in a dual-bus parallel system. Figure 2-73 shows connecting control cables to a dual-bus system.

Figure 2-73 Connecting control cables to a dual-bus system



For connecting other control cables, connect control cables to each UPS in the parallel system by referring to connecting control cable method.

2.4 Installing Optional Components

2.4.1 Installing Antiseismic Kits



NOTICE

Install antiseismic kits only when the cabinet is floor-mounted.

Step 1 Mark mounting holes on the ground according to the marking-off template, the mounting hole dimensions of antiseismic kits are shown in Figure 2-74, Figure 2-75, Figure 2-76 and Figure 2-77.

Figure 2-74 Dimensions of antiseismic kit mounting holes (200 kVA/300 kVA)

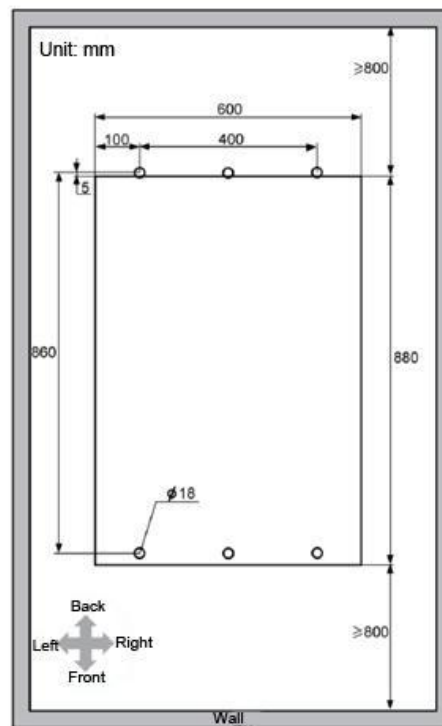


Figure 2-75 Dimensions of antiseismic kit mounting holes (400 kVA/500 kVA)

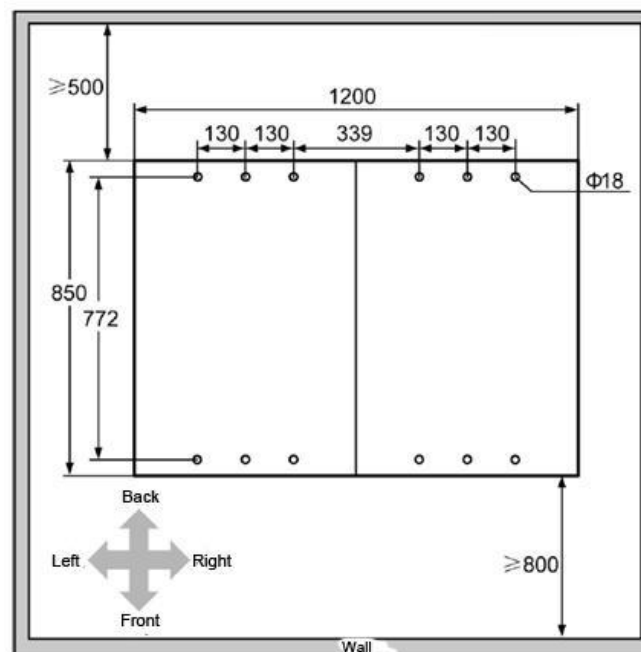


Figure 2-76 Dimensions of antiseismic kit mounting holes (600 kVA)

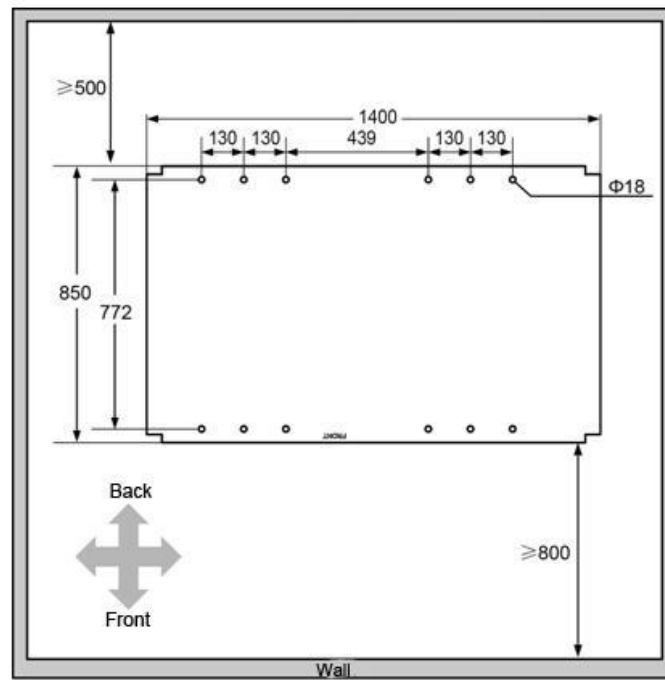
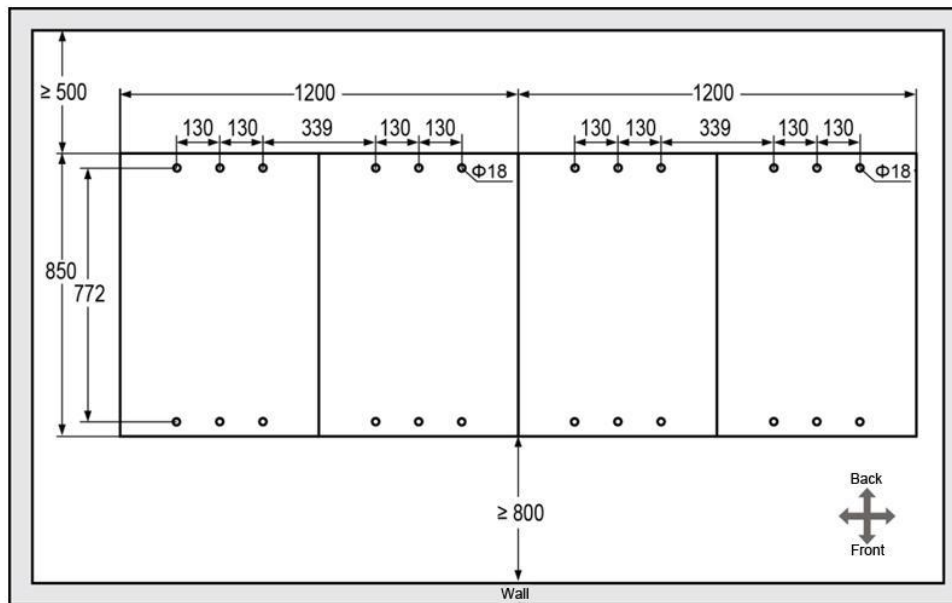


Figure 2-77 Dimensions of antiseismic kit mounting holes (800 kVA)

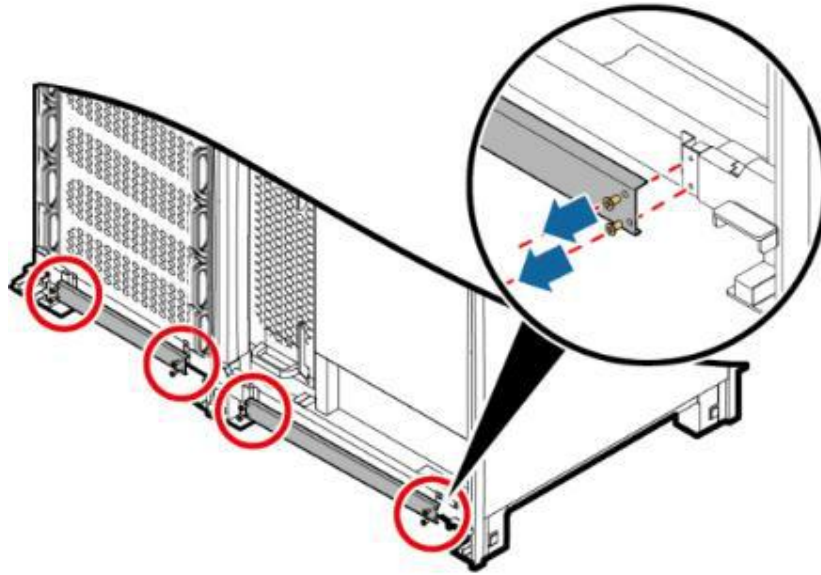


Step 2 Drill holes for installing expansion bolts, and install expansion bolts by referring to section of installing the UPS on the Ground.

Step 3 Open the front door, and remove support baffle plates on the front of the cabinet, as shown in Figure 2-78. Remove the rear covers.

Only take 500 kVA UPS as an example:

Figure 2-78 Remove support baffle plates (500 kVA)



Step 4 Use M6 screws to fasten the antiseismic kits to the front and rear of the cabinet respectively, the tightening torque is 3N·m, as shown in Figure 2-79 and Figure 2-80.

Figure 2-79 Fasten the antiseismic kits to the cabinet (300 kVA)

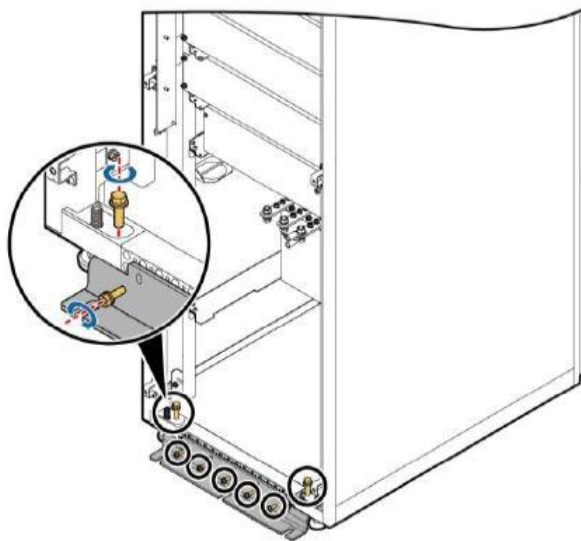
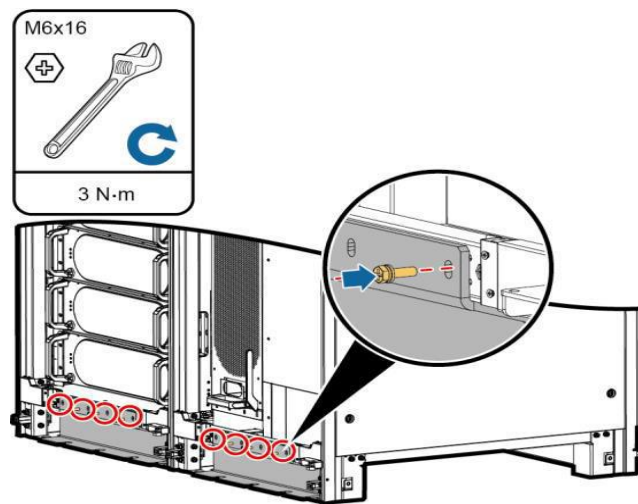


Figure 2-80 Fasten the antiseismic kits to the cabinet (500 kVA)



Step 5 Adjust the cabinet to ensure that the expansion bolts holes align with the beneath half holes.

Step 6 Use M12×60 expansion bolts to firmly lock the front and rear antiseismic kits to the ground. Take front cabinet for example, as shown in Figure 2-81 and Figure 2-82.

Figure 2-81 Lock the antiseismic kits to the ground (300 kVA)

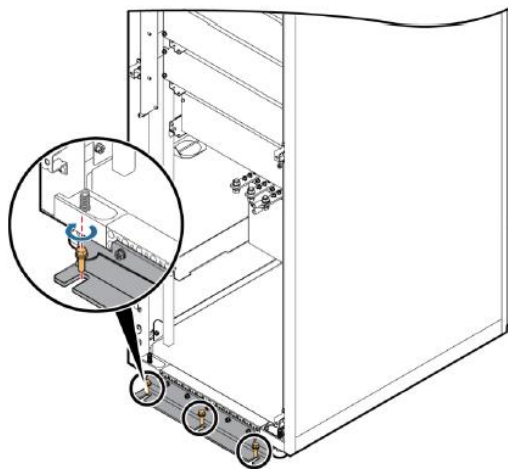
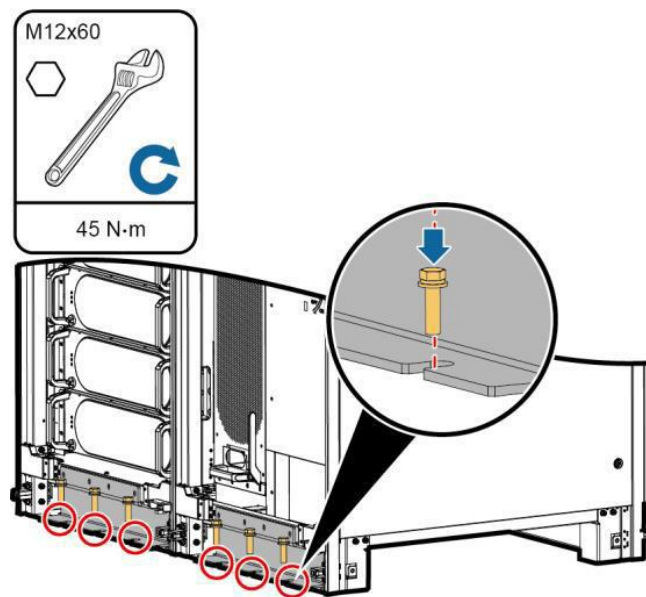


Figure 2-82 Lock the antiseismic kits to the ground (500 kVA)



Step 7 Reinstall the support baffle plates and rear covers in the cabinet.

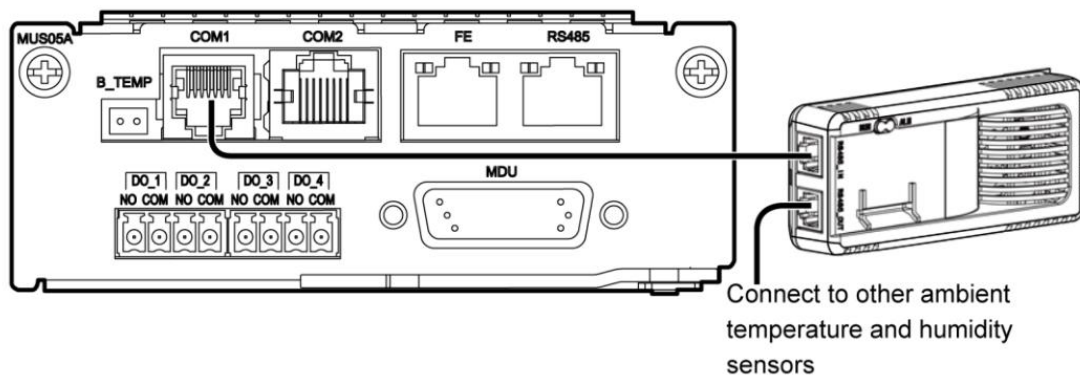
Step 8 Install the front and rear anchor baffle plates and left and right anchor baffle plates.

2.4.2 Installing an Ambient Temperature and Humidity Sensor

See the *UPS Ambient Temperature and Humidity Sensor User Manual*.

Figure 2-83 shows the position of an ambient temperature and humidity sensor in the UPS.

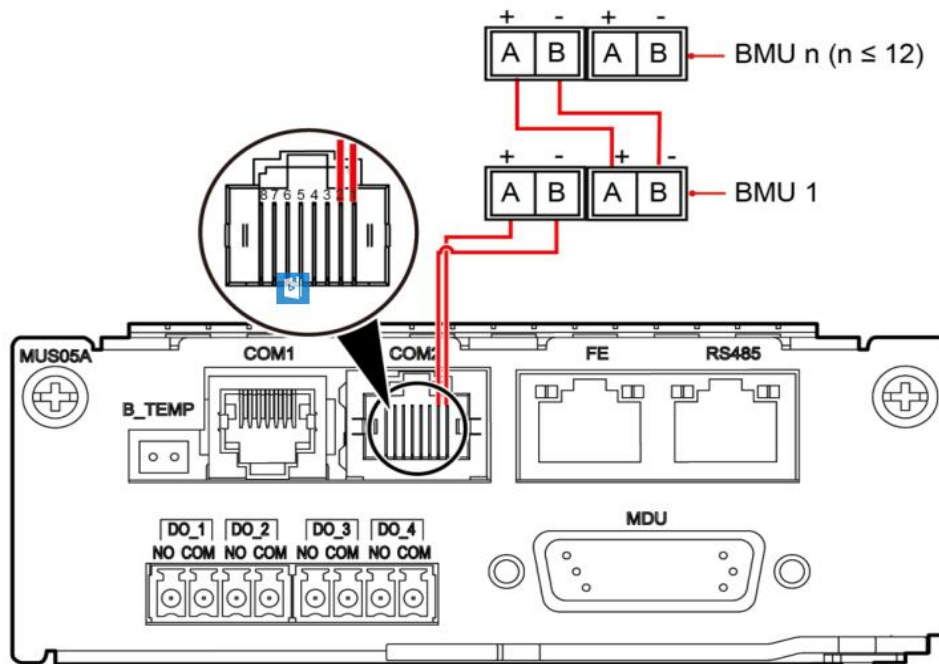
Figure 2-83 Connecting a UPS to an ambient temperature and humidity sensor



2.4.3 Installing a BMU

See the *UPS Battery Monitor Unit User Manual*. Figure 2-84 shows the BMU position in the UPS.

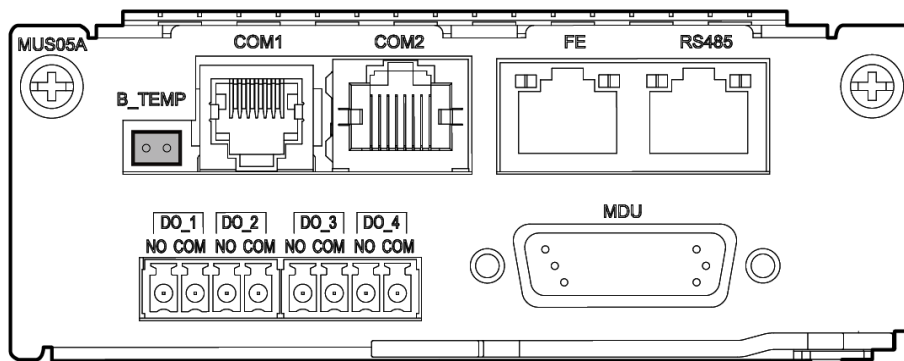
Figure 2-84 Connecting a BMU to the UPS



2.4.4 Installing a Short-distance Battery Temperature Sensor

For details, see the *UPS Short-Distance Battery Temperature Sensor User Manual*. Figure 2-85 shows the installation position of a short-distance battery temperature sensor in the UPS.

Figure 2-85 Ports for the Short-distance battery temperature sensor on the UPS



NOTE

After battery installation, check that the battery voltage is 10.5~13.5 V and the battery voltage difference is less than or equal to 5%. If the conditions are not met, charge or replace the batteries.

2.5 Installation Verification

Table 2-9 lists check items.



NOTICE

Check items 09 and 10 in Table 2-9 carefully. Otherwise, the UPS may break down.

Table 2-9 Installation check list

No.	Item	Acceptance Criteria
01	Consistency between system configurations and delivery configurations	System configurations, including models and number of modules, comply with the contract.
02	Cable layout	Cables are routed properly and meet engineering requirements.
03	Cable connections	Input and output power cables and battery cables are securely connected and spring washers are flattened, prevent falling off and safety accidents. Ensure that there is no disconnection or potential risk.
04	Serial port connection (security protection mechanism supported)	Signal cables are connected properly and securely.
05	Cable labels	Both ends of each cable are labeled. Labels are easy to understand.
06	Ground cable connections	The ground cable is securely connected to the equipment room ground bar. Measure the resistance between the UPS ground cable and the equipment room ground bar, which must be less than 1Ω.
07	Distances between cable ties	Distances between cable ties are the same, and no burr exists.
08	Cable connections	Cables are properly connected according to wiring diagrams.
09	Live wire and neutral wire connections	Input and output live wires and neutral wires are correctly connected. Mains input terminals 1L1, 1L2, 1L3, and N, bypass input terminals 2L1, 2L2, 2L3, and N, and output terminals U, V, W, and N are properly connected.
10	Input and output live wire phase sequences	In single UPS mode, mains and bypass input and output live wires are connected in a correct sequence; in a parallel system, mains and bypass input and output live wires are connected in the same sequence for each UPS.
11	Battery cable connection	Check that the voltages on the positive and negative battery terminals and battery N are correct using a multimeter.
12	Operating environment	Clean the conductive dust and other sundries inside and outside the cabinet.
13	Copper busbar short circuit	Check that copper busbars are open-circuited using a multimeter.



NOTICE

After ensuring that all items are qualified, power on the UPS according to the guides in the manual.