SmartLi-80Ah Quick Guide
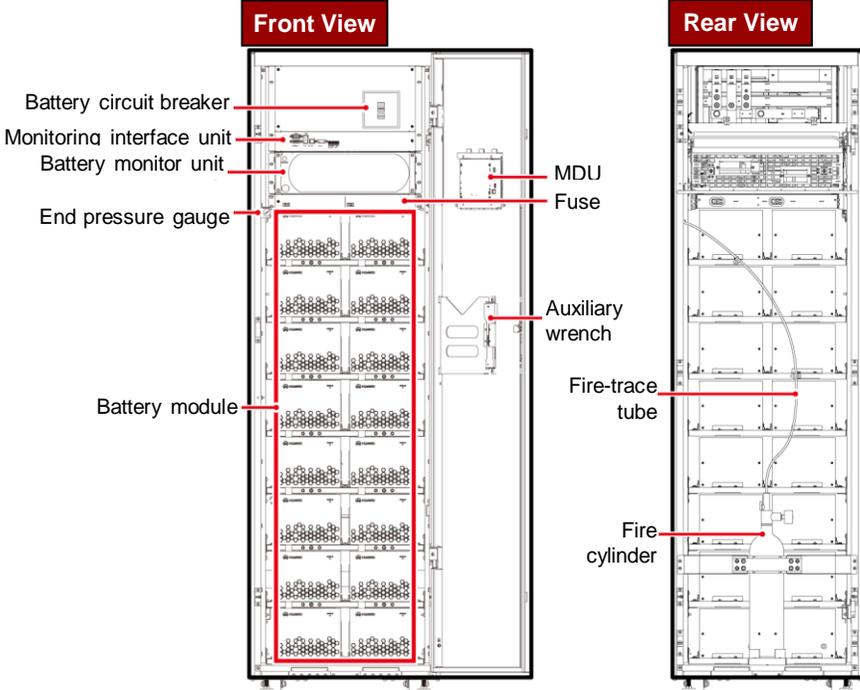
Issue: 02
Part Number: 31500DAE
Date: 2020-03-23

1 Overview

Model	Capacity	Weight	Dimensions (H x W x D)	Configuration type
SmartLi-512V-80AH-F-01	80 Ah	< 800 kg	2000 mm x 600 mm x 850 mm	With an LCD (master cabinet)
SmartLi-512V-80AH-S-01				Without an LCD (slave cabinet)

Front View

- Battery circuit breaker
- Monitoring interface unit
- Battery monitor unit
- End pressure gauge
- Battery module
- MDU
- Fuse
- Auxiliary wrench

Rear View

- Fire-trace tube
- Fire cylinder

UB11W00005

NOTICE

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

2 Installing a Fire Cylinder

1. Remove the rear panel of the cabinet.
2. Remove the fire cylinder.
   a) Remove the fire cylinder fastener.
   b) Take out the fire cylinder.
3. Check the fire cylinder and all components for any damage, abrasion, or corrosion. If there is any visible abrasion or corrosion, replace the damaged components and all corroded components.
4. Send the fire cylinder to the gas station to fill extinguishant. Heptafluoropropane or perfluorohexone is recommended. The required amount is 3 kg.

M6x16

4.5 N·m

UB11H00014

> **NOTICE**
>
> • In the process of assembling and filling, please pay attention that the valve, container and other parts should keep clean and not polluted.
> • This filling instruction only refers to the process of valve installation and extinguishing agent filling, and the rest should be performed according to the filling process of each filling station (including bottle washing, pressure testing, etc.).
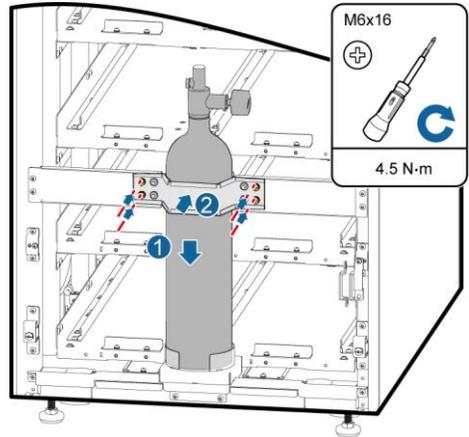
   a) Install the hose to the fire cylinder and tighten the connection nut.
   b) Remove the valve positioning kit and open the valve.
   c) Fill extinguishant into the fire cylinder through the hose.
   d) After the extinguishant is filled, close the valve.
   e) Slowly fill the drive gas (nitrogen) through the hose and open the valve again.
   f) Shake the cylinder evenly and keep the pressure in the cylinder in the range of 1.7–1.8 MPa at 20℃.
   g) After the pressure is stable, close the valve.
   h) Reinstall the valve positioning kit.

5. Check the status of the fire cylinder after filling extinguishing agent. If the fire cylinder is not installed in the cabinet immediately after extinguishing agent is filled, check the status of the fire cylinder again before installation.
   • Check that the ball valve is closed (vertical to the cylinder).
   • Check that the reading of the pressure gauge on the fire cylinder is greater than 1.6 Mpa at 20℃ and the pointer is in the green zone.
6. Install the fire cylinder.

> **NOTICE**
>
> • Keep the fire cylinder upright.
> • Ensure that the front of the pressure gauge faces the right side of the cabinet (as shown in the figure) and that the cylinder does not interfere with the battery trays and the rear cover of the cabinet.

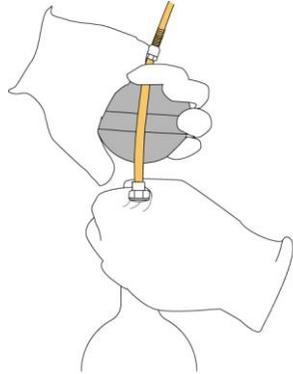7. Install the fire-trace tube on the fire cylinder.

Do not bend or twist the fire-trace tube or bind the tube using cable ties. Otherwise, the fire cylinder may fail.

a) Clamp the end of the fire-trace tube to the threaded nozzle using a pipe holder.

Hold the pipe holder close to the end to avoid bending the tube during pipe insertion.

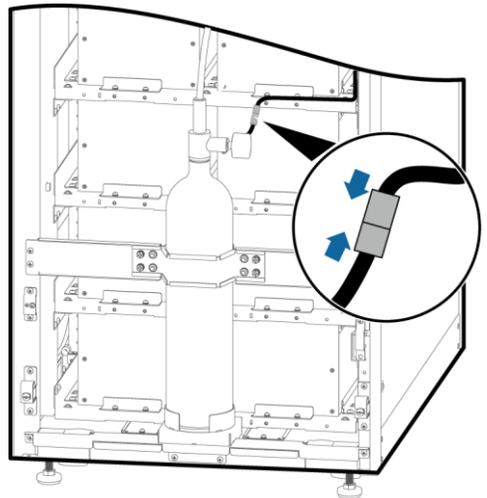b) Tighten the connection nut to 7 N·m using an adjustable torque wrench.

UB11H00024

8. Remove the valve positioning kit, open the valve, reinstall the positioning kit, and secure it.

UB11H00031

9. Interconnect the dry contact cable of the fire cylinder and the cable reserved in the cabinet.
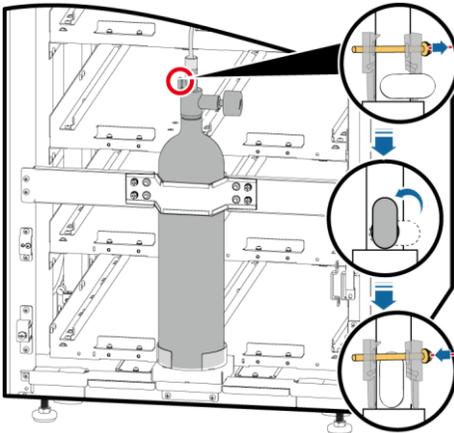
UB11I40013

10. Check the end pressure gauge on the front of the cabinet. The pointer should be in the green zone and the pressure reading should be greater than 1.6 Mpa at 20℃ . Record the reading of the pressure gauge. 8 hours later, observe the pressure gauge again. The pressure reading should remain unchanged.

3 Installing a Cabinet
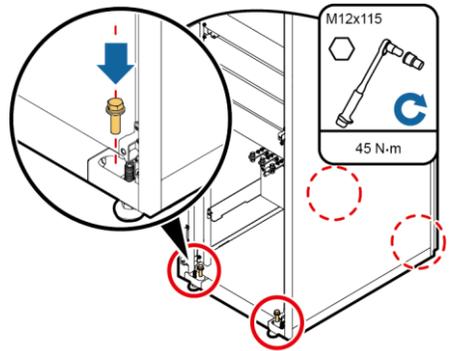
Secured Installation

1. Determine the position for installing the cabinet. Mark mounting holes based on the drawings (unit: mm).
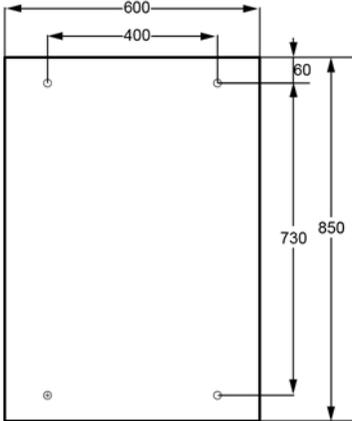
UA07S00001

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 SmartLi need to be lifted from the ground, perform Step 1 to Step 2 in Non-Secured Installation.
5. Open the front door, and remove the four rubber plugs from the bottom of the cabinet.
6. Insert four M12x115 expansion bolts into the expansion bolt holes in the floor, and tighten the expansion bolts.

M12x115

45 N·m

UA10000053

Non-Secured Installation

1. Lower the four leveling feet at the bottom of the cabinet by using a wrench until all the four castors at the bottom hang in the air and the leveling feet bear the whole cabinet weight.
2. Check whether the bottom of the cabinet is horizontal by using a level instrument. If the cabinet is not leveled, adjust the leveling feet.
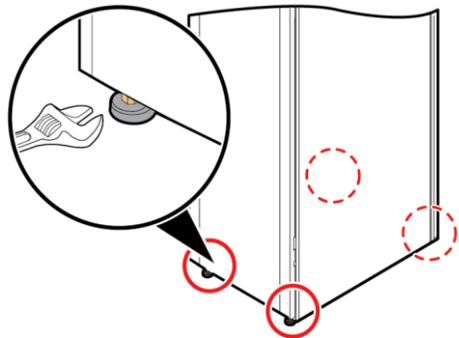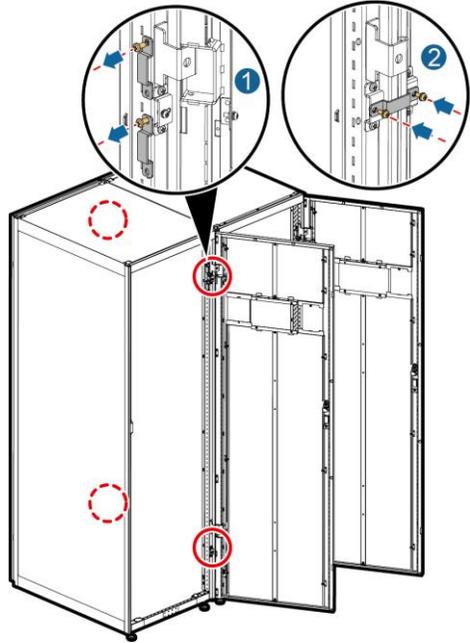

UA10000048

Combining Cabinets

1. Install each cabinet in sequence according to the installation method of a single cabinet.
2. Combine cabinets..

UA07H00010

> **NOTICE**
>
> 1. The SmartLi supports the combination of up to eight cabinets.
> 2. When multiple cabinets are connected in parallel, only the basic cabinet has an LCD.

4 Cable Connection Reference

4.1 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.
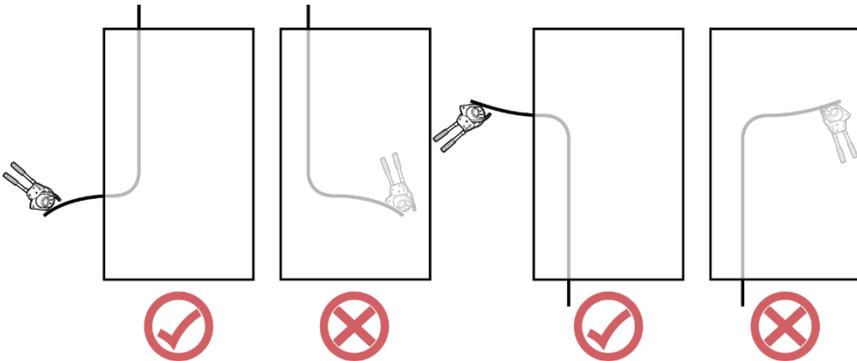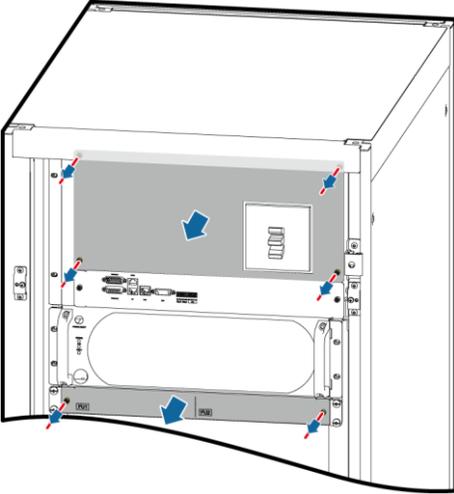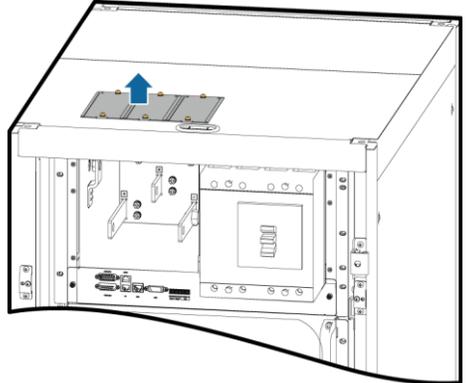

UA21I10068

4.2 Installing a Ground Cable

1. Remove the PDU and fuse cover.

UB11H00030

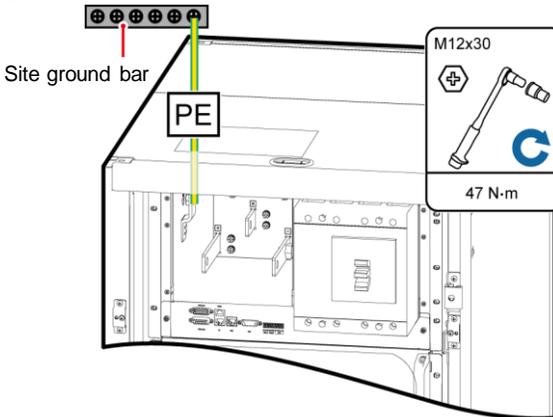2. Remove the cover from the top of the cabinet based on the cable route and cable dimensions.
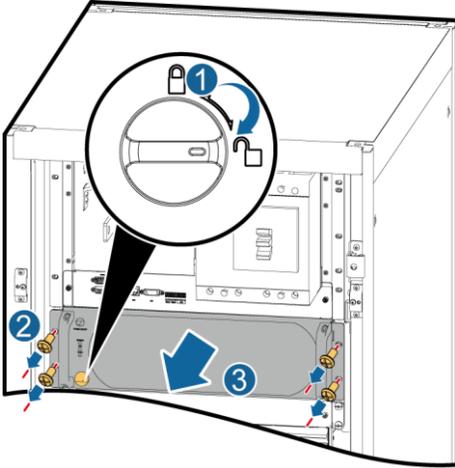

UB11H00025

3. Connect the ground cable.

Site ground bar

PE

M12x30

47 N·m

UB11I50001

1. Pull out the battery monitor unit for about 10 cm.
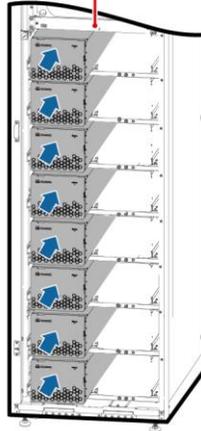

UB11H00026

> **NOTICE**
>
> - Install the battery modules from bottom to top and from left to right to prevent falling over due to imbalance.
> - Two persons are required to install the battery modules.
> - Place the front cover properly to prevent the light pipe from falling off.

2. Install battery modules.
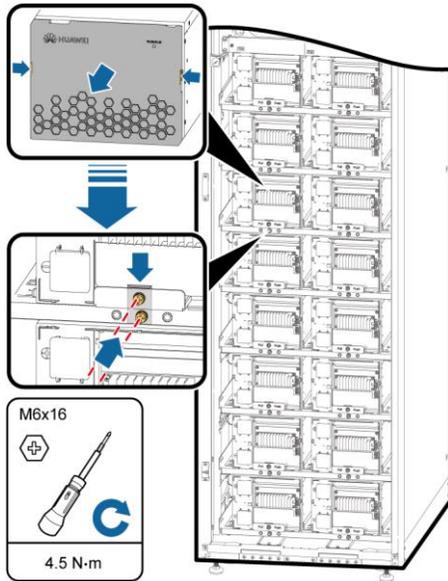

Full-capacity Cabinet Configuration
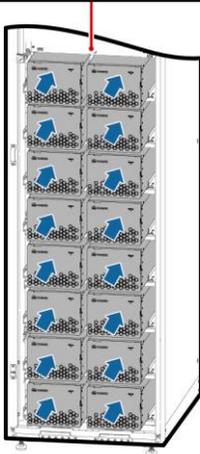
Half-capacity Cabinet Configuration

UB11H00033

3. Remove front cover from the battery module, and install battery baffle plate.
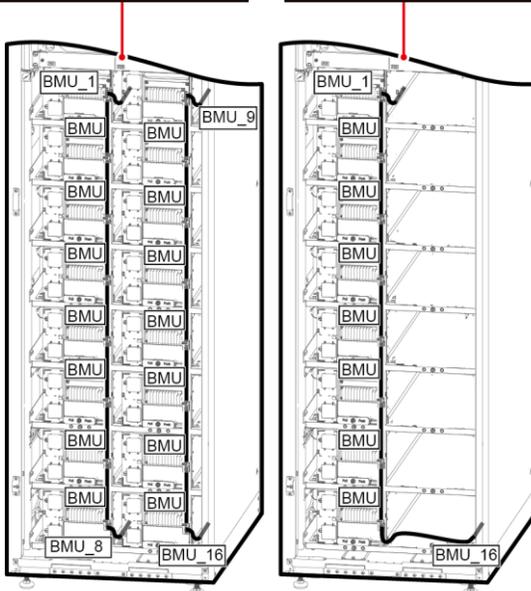

M6x16

4.5 N·m

UB11H00034

4. Install battery communications cables.
   a. Install communications cables between battery modules.
   b. Connect communications cables (reserved in the cabinet) between the battery modules and the battery monitor unit .

Full-capacity Cabinet Configuration

Half-capacity Cabinet Configuration

BMU_1
BMU
BMU
BMU
BMU
BMU
BMU
BMU
BMU_8

BMU_9
BMU
BMU
BMU
BMU
BMU
BMU
BMU_16

BMU_1
BMU
BMU
BMU
BMU
BMU
BMU
BMU_16

UB11I40012

5. Install battery copper bars and cables.
    a. Open the terminal protective covers, install copper bars between battery modules, and close the terminal protective covers.
    b. Open the terminal protective covers, install copper bars between battery modules and fuses, and close the terminal protective covers.
    c. Open the terminal protective covers, install the battery cables reserved in the cabinet, and close the terminal protective covers.

UB11I30004

> **NOTICE**
>
> • During installation, wear insulation gloves and use insulated tools.
> • Connect the round hole of the copper bar to the upper battery module, and then connect the waist hole of the copper bar to the lower battery module.
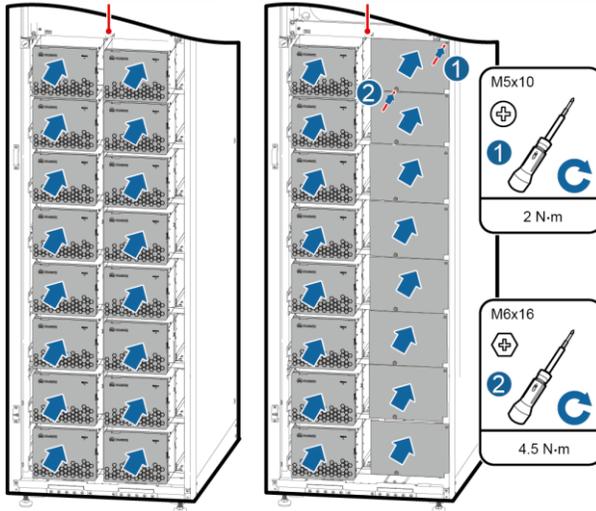> • Excessive bolts will be used as spare parts.
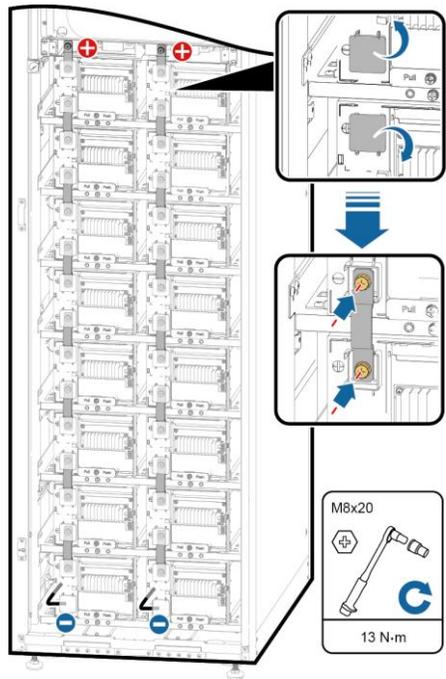
6. Install the battery module covers.

Full-capacity Cabinet Configuration

Half-capacity Cabinet Configuration
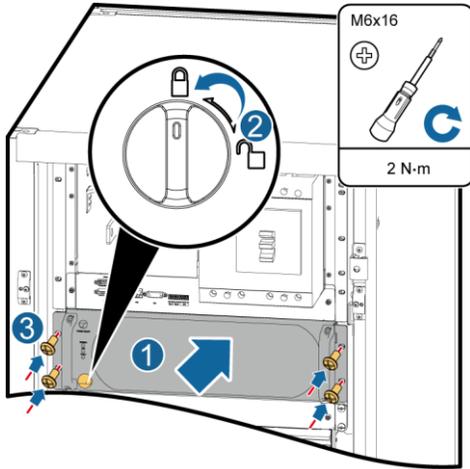

> **NOTICE**
>
> Place the cables at the notches and ensure that the covers do not press the cables.

UB11H00043

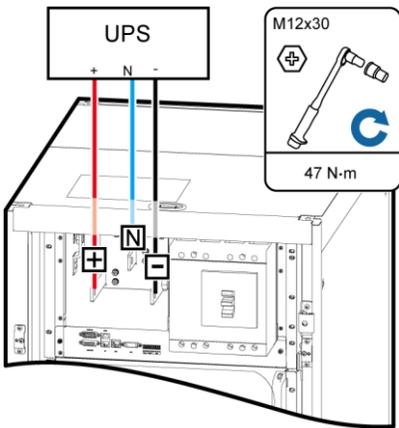7. Reinstall the battery monitor unit .

UB11H00036

4.4 Installing Output Cables

Connect power cables to the UPS.

📖 NOTE

The following uses the UPS with a neutral wire as an example.

Without a BBB-BOX

With a BBB-BOX

UB11I30005
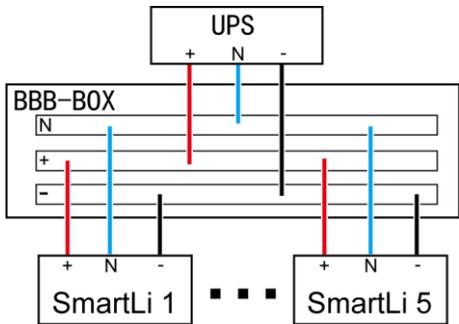
UB11I30003

Connect a communications cable to the UPS.

Single Cabinet

MUS05A

COM2

COM

UB11I40001
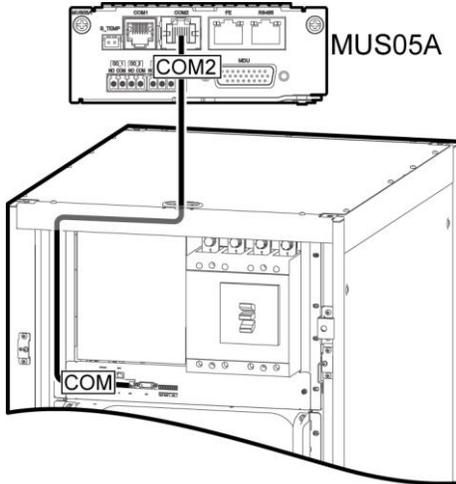
Parallel System, for Example, Five Cabinets

MUS05A
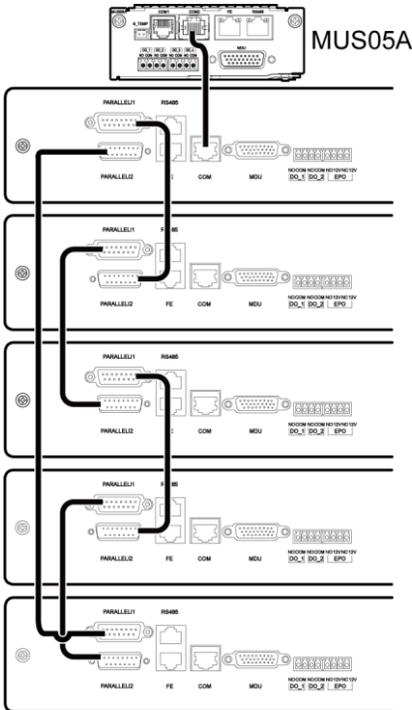
📖 NOTE

The numbers of cabinets in a parallel system depend on the connection of control cables. After the control cables are connected according to the preceding figure, the cabinets are numbered 1, 2, 3, 4, and 5 from top to bottom.

UB11I40009

5 Verifying the Installation

1. Check that there is no foreign matter at the top and bottom of the cabinets, copper bars, switches, and the rear of units.
2. Check that the battery cables are correctly connected.
3. After verifying the installation, reinstall all the covers.
4. (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.

Paper protective film

Sealing putty

UA15H00027

5. Do not remove the dustproof cover before power-on to prevent dust inside the SmartLi.

Top dustproof cover

Rear dustproof cover

Front dustproof cover

UB11W00004
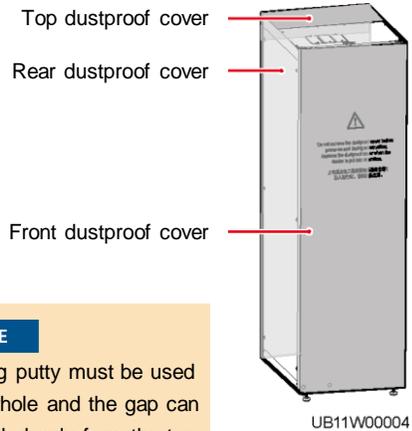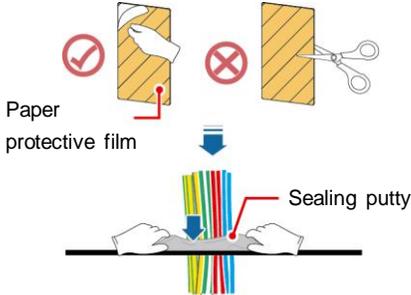
> **NOTICE**
>
> Sealing putty must be used as a whole and the gap can be sealed only from the top.

6 Powering On

> **NOTICE**
>
> - Upgrade the UPS software to the version that supports lithium battery connection. See *UPS5000 The Relationship of Software Version* to check the version number.
> - **Thres. of low batt. volt. over dry contact (V/cell)**: If you set **Batt. Volt. Below Threshold** for an output dry contact and the battery voltage is lower than this threshold, the output dry contact will output signals accordingly. (Set on the UPS)
> - Turn on the ready switch on the battery monitor unit.
> - When the UPS is in normal mode, ensure that the UPS is running stably before turning on the battery circuit breaker on the SmartLi.

1. On the UPS LCD screen, set **System Info > Settings > Battery Settings > Battery Type** to **Lithium battery**.
2. Press and hold the POWER ON/OFF button on the battery monitor unit for more than 2s. The green indicator of the battery monitor unit blinks at 4 Hz.

> **NOTICE**
>
> - The **BCB off** alarm is displayed on the UPS LCD and SmartLi LCD (the red indicator is steady on). No action is required. After the battery circuit breaker is closed, the alarm is automatically cleared.
> - After the battery monitor unit is started, the green indicator is on for 1s and then off for 4s.
> - If multiple SmartLi cabinets are combined, press and hold the POWER ON/OFF button on the battery monitor unit of the master cabinet for more than 2 seconds to power on the master cabinet. Then, power on slave cabinets one by one in the same way.

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

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

📖 NOTE

To ensure system security, change the LCD and WebUI passwords after the first login.
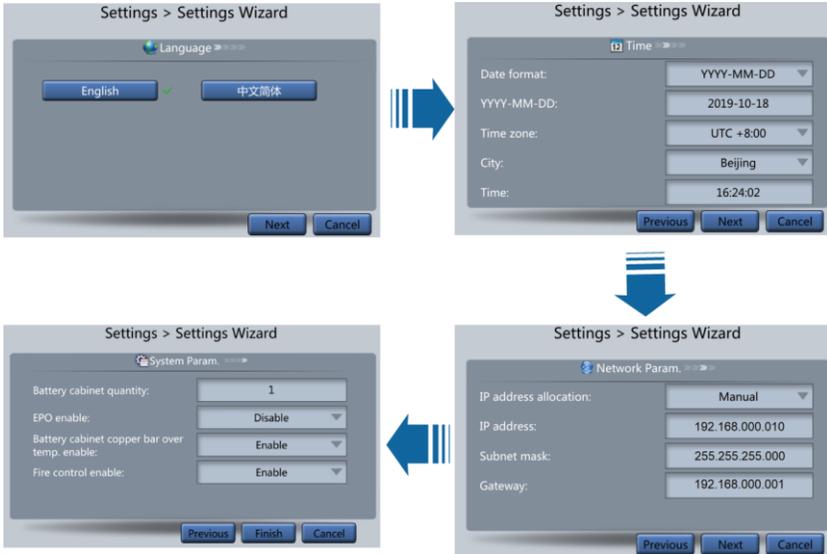
Item	LCD Preset Password	Default Value	Value Range
Battery cabinet quantity	Specifies the total number of combined cabinets.	1	1–8
EPO enable	EPO (emergency power-off) is performed only when this parameter is enabled and the EPO switch is triggered. When EPO detection is changed from Disable to Enable, check that the EPO cable is connected correctly.	Disable	Disable, Enable
Battery cabinet copper bar over temp. enable	If this parameter is set to Enable, an alarm is reported when the copper bar is overheated.	Enable	Disable, Enable
Fire control enable	If this parameter is set to Enable, an alarm is reported after the fire extinguishing action is triggered.	Enable	Disable, Enable

4. After the green indicator of the battery monitor unit blinks at 10 Hz, turn on the battery circuit breaker on the SmartLi.
5. When multiple SmartLi cabinets are combined:
 1) If the green indicator of one battery monitor unit blinks at 10 Hz, turn on the battery circuit breaker on any SmartLi.

<div style="background:#fce9cf;padding:10px;">

NOTICE

In this case, the green indicators of all battery monitor units are on for 1s and then off for 4s, you cannot turn on the battery circuit breakers on other SmartLi cabinets or start the UPS in cold mode.

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 2) After the green indicators of other battery monitor units blink at 10 Hz, turn on the battery circuit breaker on the SmartLi where the battery monitor unit blinks at 10 Hz one by one.

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NOTICE

• If the green indicator of the battery monitor unit blinks at 10 Hz, you cannot start the UPS in cold mode.
• If the green indicator of the battery monitor unit blinks at 1 Hz or is steady on, you can start the UPS in cold mode.

</div>

7 Powering Off

Switch off the battery circuit breakers. (Perform this operation for multiple SmartLi cabinets one by one.)

↓

Press and hold down the POWER ON/OFF button on the battery monitor unit for at least 5 seconds. (Perform this operation for multiple SmartLi cabinets one by one.)

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https://support.huawei.com