CertaUPS

C750 / C750R USER MANUAL

A COMPLETE INSTALLATION AND USER GUIDE

THE C750 & C750R SERIES

An uninterruptible power supply (UPS) incorporating online double conversion technology, which eliminates all mains power disturbances and IOT Technology

www.certaups.com

For assistance please contact your local CertaUPS partner.

Scan to download the APP

Contents

SAFETY INSTRUCTIONS

KEEP THESE INSTRUCTIONS IN A SAFE PLACE
This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.

All UPS models are considered operating at an optimal temperature of 20 – 25°C

SPECIAL SYMBOLS

RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.

Important instructions that must always be followed.

EU separate collection and lead content mark for lead acid batteries. Indicates that the battery must not be disposed of to the 'normal' household waste but be separately collected and recycled.

EU separate collection mark for waste electrical and electronic equipment (WEEE). Indicates that the item must not be disposed of to the 'normal' household waste but be separately collected and recycled.

Information, advice, help.

Refer to the user manual.

SAFETY OF PERSONS

- RISK OF VOLTAGE BACKFEED. The system has its own power source (the battery). Isolate the UPS and check for hazardous voltage upstream and downstream during lockout-tagout operation. Terminal blocks may be energized even if the system is disconnected from the AC power source.

- Dangerous voltage levels are present within the system. It should be opened exclusively by qualified service personnel.

- The system must be properly grounded.

- The battery supplied with the system contains small amounts of toxic materials. To avoid accidents, the directives listed below must be observed:
  - Servicing of batteries should be performed by personnel knowledgeable about batteries and the required precautions.
  - When replacing batteries, replace with the same type and number of batteries or battery packs.
  - Do not dispose of batteries in fire. The batteries may explode.
  - Batteries constitute a danger (electrical shock, burns). The short-circuit current may be very high.

- Precautions must be taken for all handling:
  - Wear rubber gloves and boots.
  - Do not lay tools or metal parts on top of batteries.
  - Disconnect charging source prior to connecting or disconnecting battery terminals.
  - Determine if battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).

PRODUCT SAFETY

- The UPS connection instructions and operation described in the manual must be followed in the indicated order.
- UPS enclosure IP rating IP20.
- CAUTION - To reduce the risk of fire, the unit connects only to a circuit provided with branch circuit overcurrent protection for
- The upstream circuit breaker for Normal AC/Bypass AC must be easily accessible. The unit can then be disconnected from AC power source by opening this circuit breaker.
- An additional AC contactor is used for back feed protection and must comply with IEC/EN 62040-1
- Disconnection and overcurrent protection devices shall be provided by others for permanently connected AC input (Normal AC/Bypass AC) and AC output circuits.
- Check that the indications on the rating plate correspond to your AC powered system and to the actual electrical consumption of all the equipment to be connected to the system.
- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.
- Never install the system near liquids or in an excessively damp environment.
- Never let a foreign body penetrate inside the system.
- Never block the ventilation grates of the system.
- Never expose the system to direct sunlight or source of heat.
- If the system must be stored prior to installation, storage must be in a dry place.
- The admissible storage temperature range is -25°C to +55°C without battery (-15°C to +40°C with battery).
- TN-S/IT/TN-C/TT of electrical supply system may be connected by UPS.
- This UPS may be provided with a maximum of 6 extension battery cabinets or equivalent.

SPECIAL PRECAUTIONS

- The UPS and EBMs are heavy: wear safety shoes and use vacuum lifter preferentially for handling operations.
- All handling operations will require at least two people (unpacking, lifting, installation in rack system).
- Before and after the installation, if the UPS remains de-energized for a long period, the UPS must be energized for a period of 24 hours, at least once every 6 months (for a normal storage temperature less than 25°C). This charges the battery, thus avoiding possible irreversible damage.
- During the replacement of a Battery Module, it is imperative to use the same type and number of batteries as the original Battery Module provided with the UPS to maintain an identical level of performance and safety.
- This is a category C3 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

1. **INTRODUCTION**

Thank you for selecting our UPS to protect your electrical equipment.

We recommend that you take the time to read this manual to take full advantage of the many features of your UPS.

Before installing your UPS, please read the booklet presenting the safety instructions. Then follow the indications in this manual.

PRODUCT FEATURES

The UPS protects your sensitive electronic equipment from the most common power problems, including power failures, power sags, power surges, brownouts, line noise, high voltage spikes, frequency variations, switching transients, and harmonic distortion.

1.1 SPECIAL CHARACTERISTIC:

- Double converter with pure sine waveform output
- Full digital control
- Output power factor = 1
- High charger capability, the charger current is up to 13Amps
- Smart charging method to expand battery life time
- EBM quantity auto detection
- Communication ports: RPO, Dry in, Dry out, intelligent slot, USB, RS232
- IoT: Ethernet(default) and Wireless (optional)
- Dot-matrix touch LCM, it supports multi-language
- 3 mode compatible (3-3 mode / 3-1 mode / 1-1 mode)
- ECO Mode
- Startable without battery

1.2 ENVIRONMENTAL PROTECTION

Products are developed according to an eco-design approach.

Substances

This product does not contain CFCs, HCFCs or asbestos.

Packing

To improve waste treatment and facilitate recycling, separate the various packing components.

- The cardboard we use comprises over 50% of recycled cardboard.
- Sacks and bags are made of polyethylene.
- Packing materials are recyclable.
  Follow all local regulations for the disposal of packing materials.

Product

The product is mainly made up of recyclable materials.

Dismantling and disassembly must take place in compliance with all local regulations concerning waste. At the end of its service life, the product must be transported to recycling centers, re-use and treatment facilities for Waste Electrical and Electronic Equipment (WEEE).

Battery

This product contains lead-acid batteries that must be processed according to applicable local regulations concerning batteries.

The battery may be removed to comply with regulations and in view of correct disposal.

2. PRODUCT OVERVIEW

2.1 MODEL LIST

1. C750-xxx-B model means 'Battery model', C750-xxx-C means 'Charger model' without internal batteries
2. UPS 10kVA and EBM (C750-BB10P for 10kVA) is 2x10 batteries selectable, UPS 20kVA and EBM (C750-BB20P for for 20kVA) is 2x20 batteries selectable.
3. The weight in this table is reference only, please see the labels on the carton for details.
4. Dimension 'D' is chassis only, not including panel.

Tower Model:

Product	Description	Net Weights (kg)	Unit Size (W x H x D)(mm)
UPS	C750-100-B	106	300*805.5*633.2
	C750-200-B	159.5	
	C750-100-C	52.9	
	C750-200-C	54.2	
EBM	C750-BB10p (1)	95.2	225*589*416
	C750-BB20p (2)	115.6	

(1) For tower 10kVA UPS+/-.
(2) For tower 20kVA UPS – +/- strings

Rackmounable Model:

Product	Description	Net Weights (kg)	Size (W x H x D)(mm)
UPS	C750R-100-C	23.8	438*129(3U)*559
	C750R-200-C	24.8	
	C750R-100-B	23.8	
	C750R-200-B	24.8	
EBM	C750R-BB10p(1)	60.5	438*129(3U)*559
	C750R-BB20p (2)	60.5	

(1) For RT 10kVA UPS - +/-
(2) For RT 20kVA UPS. Each RT 20kVA UPS needs 2pcs RT EBM for positive and negative battery input.

Optional modules and accessories:

To order further modules or accessories, please contact a CertaUPS distributor or partner.

Type	Description	Remark
750R-MBP	R 3-3 10K/20K MBP	For R model only
	R 3-3 10K/20K PARA MBP	For R model only in a parallel system installation
Intelligent Card	Dry Contact card (C-Relay)	See in chapter 6.5
	C-NMC card	
	MODBUS card (C-Modbus)	
EMP	Temperature and humidity sensors (C-EMP)	
WLAN module	WLAN module (C-WIFI)	Wireless connection for IoT
Battery cable	Battery cable (20 or 40 batteries) for Tower UPS connect with user's own EBM	1.8m length, see in chapter 3.4.3
	Battery cable (20 or 40 batteries) for Tower UPS connect with user's own EBM	
Rail kit	Rail kit for R model in Rack installation	See in chapter 3.3.2

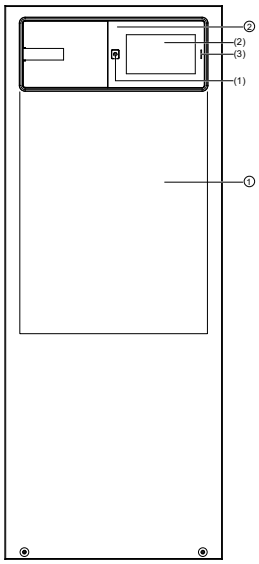
2.2 PRESENTATION

2.2.1 C750 TOWER MODEL:

UPS Module:

Front view:

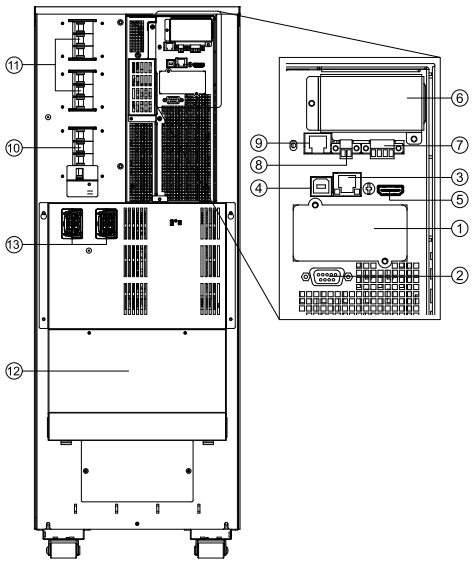
1. Ventilation area
2. LCD module, including:
    1. Power button
    2. Touch screen
    3. LED indicator



Rear view:

8. Intelligent slot
9. RS232
10. Ethernet port (RJ45, for IoT function)
11. USB
12. Wireless (HDMI, for IoT function)
13. Parallel port (optional)

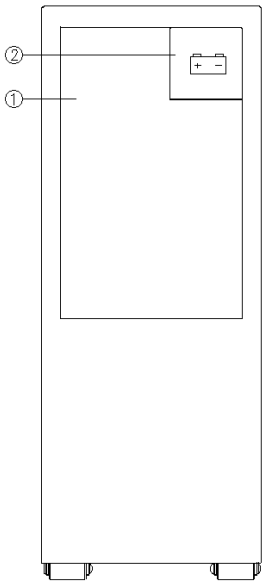
1. DRY in/out
2. RPO
3. RJ45 (for EBM detect)
4. Maintenance bypass switch
5. Main input switch and bypass input switch
6. AC input/output port (terminal block)
7. External battery port



EBM (External Battery Module)

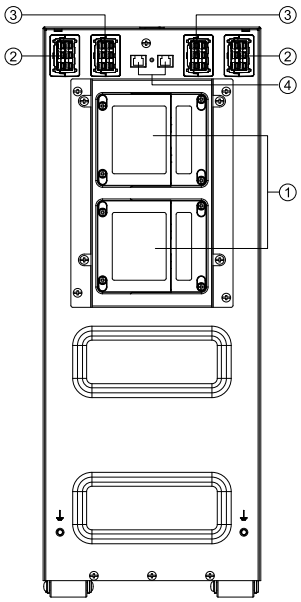
Front View:

1. Ventilation area
2. EBM label



Rear view:

1. Fuse board cover (replace EBM fuse)
2. EBM port 1
3. EBM port 2
4. EMB detection (RJ45 port)



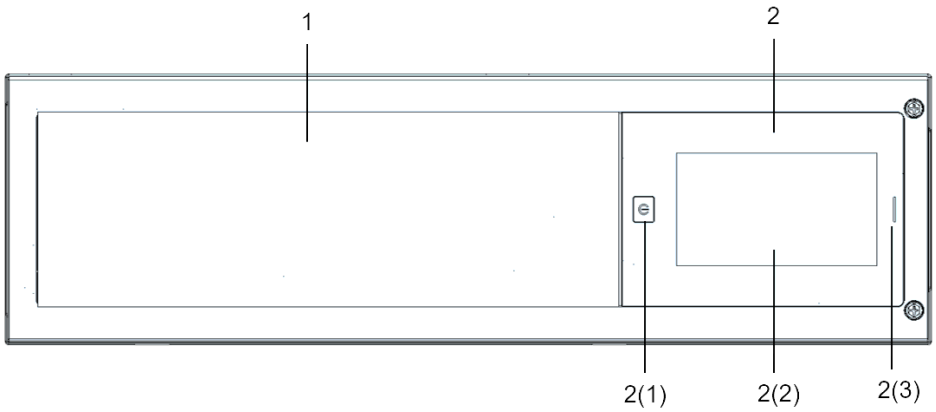
2.2.2 C750R RACKMOUNTABLE MODEL

UPS module

Front view

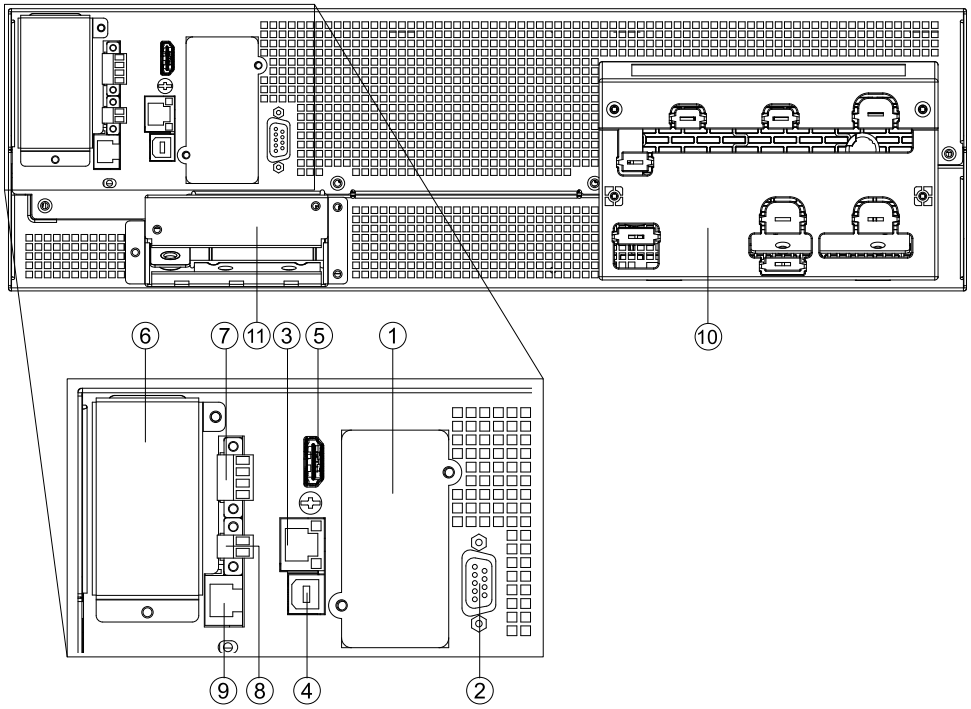
1. Ventilation area

2. LCD Modular, including: (1)---Power button (2)---Touch screen (3)---LED indicator



Rear view

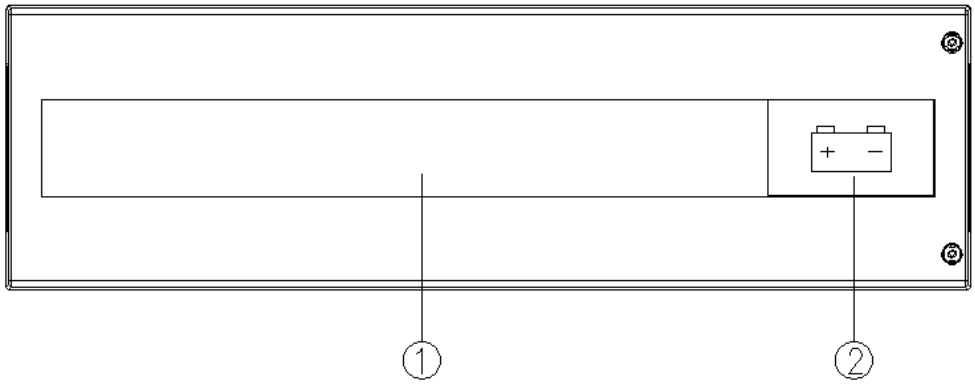
1. Intelligent slot
2. RS232
3. Ethernet port (RJ45, for IoT function)
4. USB
5. Wireless (HDMI, For IoT function)
6. Parallel port (optional by factory, default is no)
7. DRY in/out
8. RPO
9. RJ45 (for EBM detection/RT MBP detection)
10. AC input/output port (terminal block)
11. External battery port (terminal block)



External Battery Module (EBM)

Front view

1. EBM label area
2. EBM label



Rear view of EBM (C750R-BB10P for 10kVA)

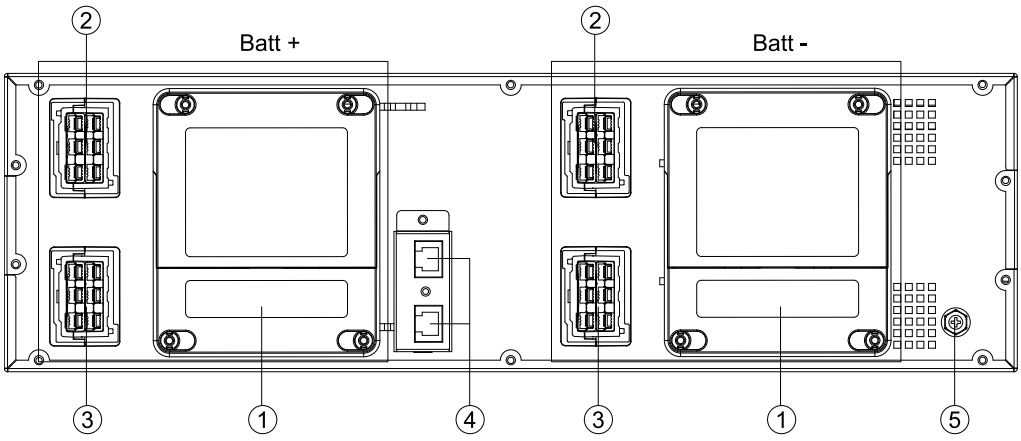
1. Fuse board cover (replace EBM fuse)

2. EBM port 1

3. EBM port 2

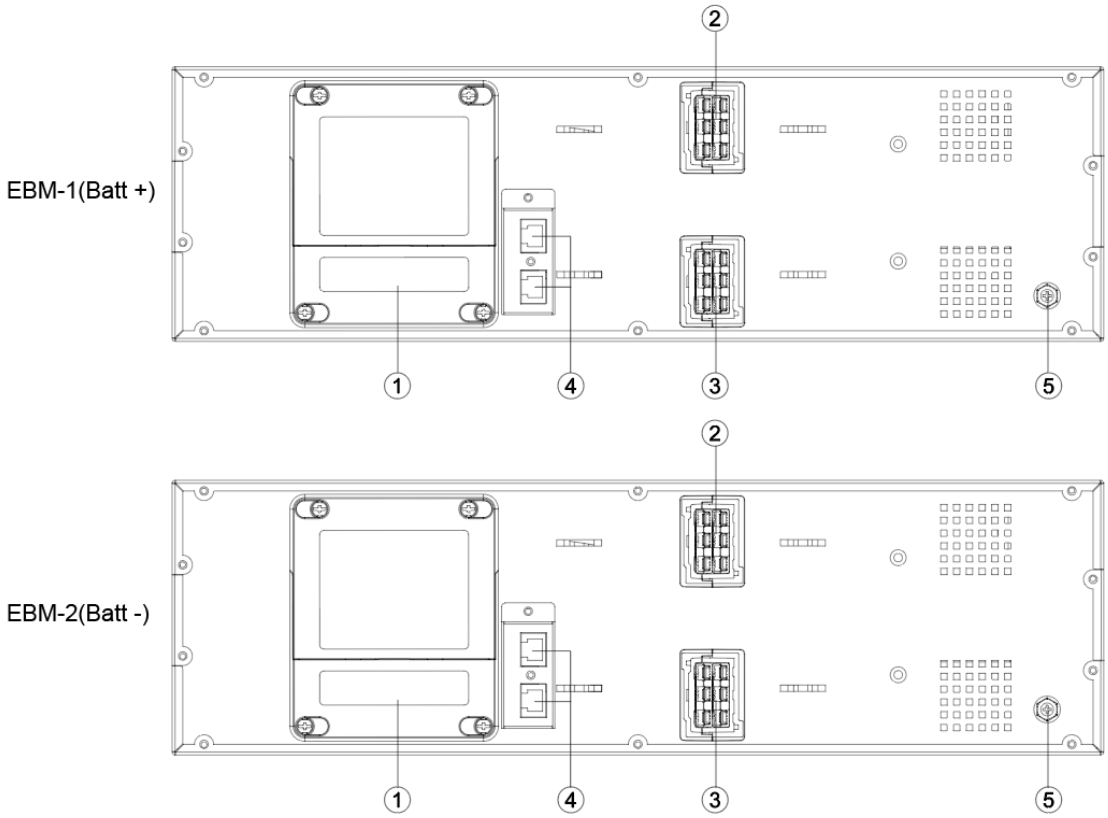
4. EBM detection Box (RJ45 port)

5. Ground screw



Rear view of EBM (C750R-BB20P for 20kVA)

1. Fuse board cover (replace EBM fuse)
2. EBM port 1
3. EBM port 2
4. EBM detection Box (RJ45 port)
5. Ground screw



3. INSTALLATION

It is recommended to move the equipment to the installation site by using a pallet jack or a truck before unpacking.

The system may be installed only by qualified electricians in accordance with applicable safety regulations.

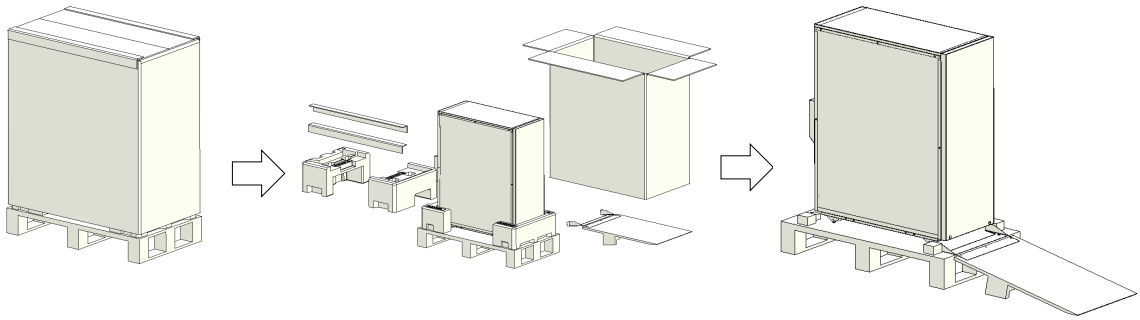
The cabinet is heavy and should only be installed by at least two persons.

3.1 UNPACKING AND INSPECTING

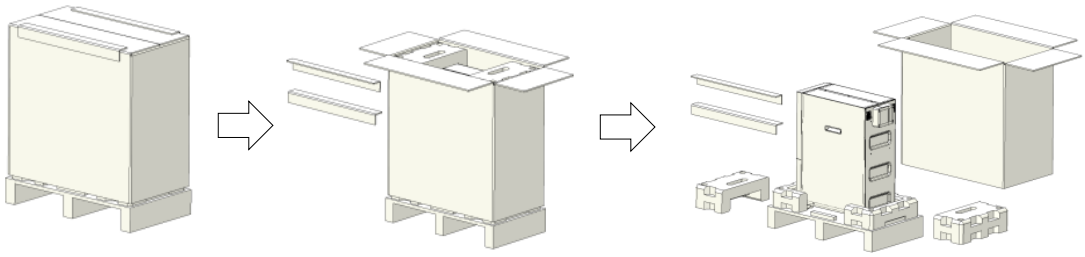
⚠ Unpacking the unit in a low-temperature environment may cause condensation to occur in and on the cabinet. Do not install the unit until the inside and outside of the unit are absolutely dry (hazard of electric shock).

If any equipment has been damaged during shipment, keep the shipping cartons and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

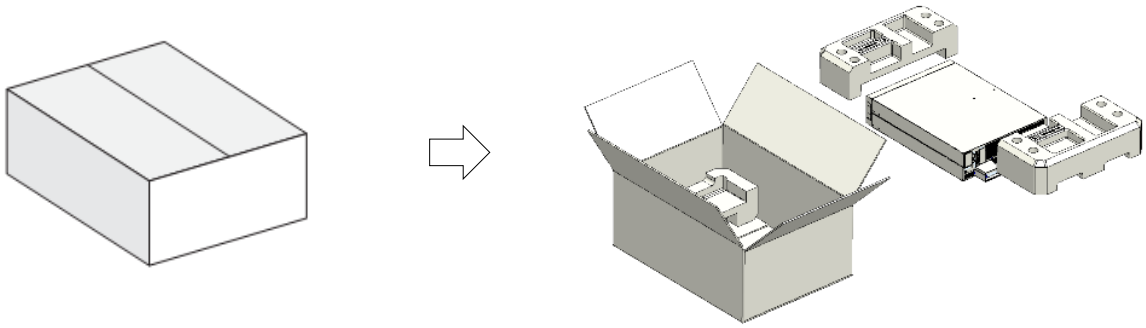
Tower UPS



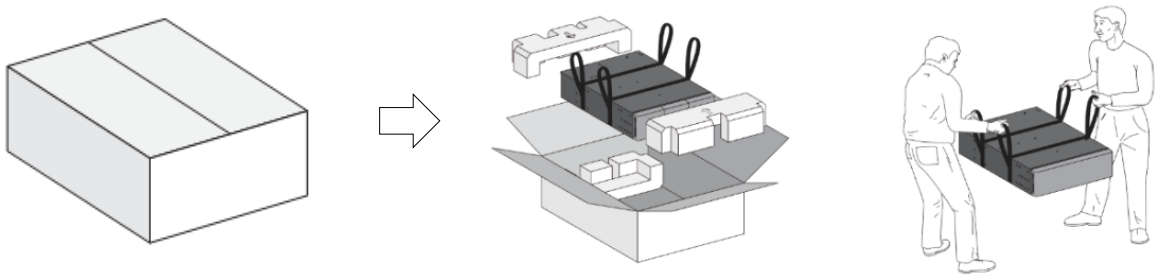
Tower EBM



Rackmountable UPS



Rackmountable EBM



Note: The cabinet is heavy, please see weight stated on the carton/label.

Do not lift the unit by the front panel or rear panels.

Dispose of, or recycle the packaging in a responsible manner, or store it for future use.

Packaging materials must be disposed of in compliance with all local regulatios concerning waste.

3.2 CHECKING THE ACCESSORY KIT

Varify that the following additional items are included with the unit:

Tower model	C750-100/200-C	C750-100/200-B	Tower EBM
Battery cable	O		√
EBM detection cable			√
Copper bus-bar	√	√	
USB cable	√	√	
Parallel cable	O	O	
Tower foot	√	√	√

PLEASE FIND UPS PRODUCT DIAGRAMS AND FULL TECHNICAL SPECIFICATIONS IN CHAPTER 9 OR VISIT
http://www.certaups.com/PRODUCT/CERTAUPS-C750/

Rackmountable model	C750R-100/200-C	C750R-100/200-B	RT EBM
Battery cable (EBM to UPS)		√	
Battery cable (EBM to EBM)		√	√
EBM detection cable			√
Copper bus-bar (with jumper cable)	√	√	
USB cable	√	√	
Parallel cable	O	O	
Tower foot	√	√	
Rack ear	√	√	√
Rack rail kit	O	O	O

Note：√--- Standard configuration; O---Option, default is Not configured

PLEASE FIND UPS PRODUCT DIAGRAMS AND FULL TECHNICAL SPECIFICATIONS IN CHAPTER 9 OR VISIT http://www.certaups.com/PRODUCT/CERTAUPS-C750R/

3.3 MECHANICAL INSTALLATION

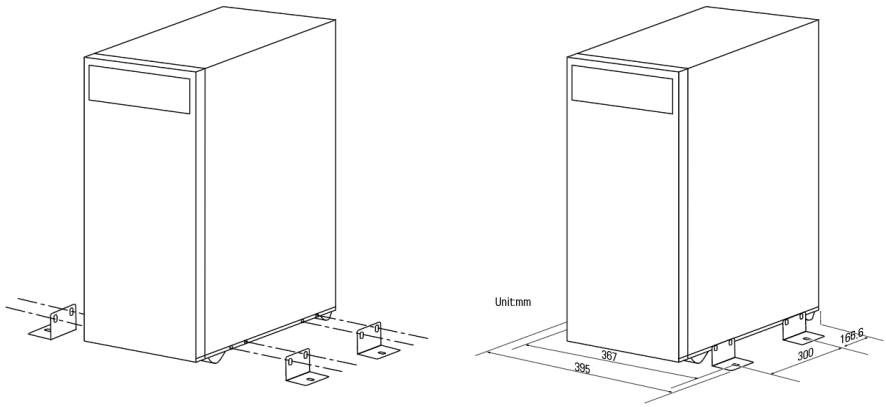
3.3.1 TOWER MODEL

To keep air-flowing freely, it is recommended to keep a clearance of at least 500mm space at both the front and rear ends.

UPS model

1. Place the unit on a flat surface in its final location and install 'Tower foot' for stability.

2. Install the unit to ground(optional): Place 4pcs bolts (M8 is recommended) in the final location for bolt positions please refer to below, then fix the unit to the bolts.

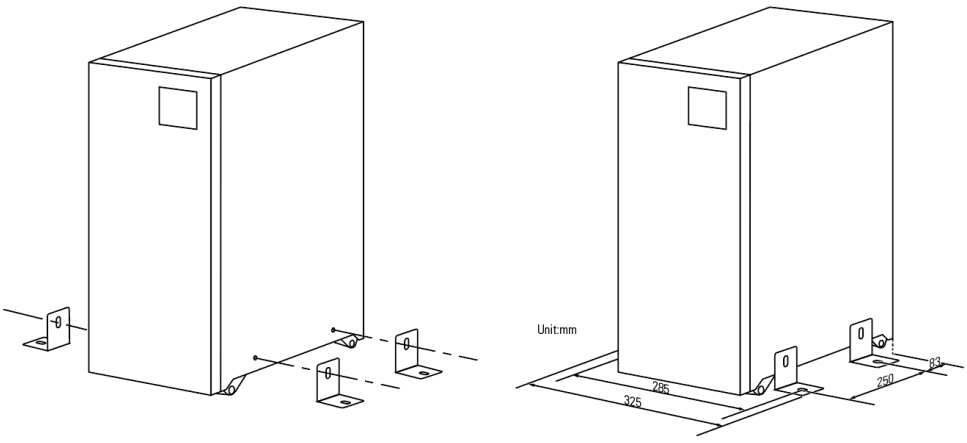


EBM model

It is recommended to place EBMs to UPS's right side.

1. Place the unit on a flat surface in its final location and install 'Tower foot' for stability.

2. Install the unit to ground(optional): Place 4pcs bolts (M8 is recommended) in the final location for bolt positions please refer to below, then fix the unit to the bolts.



3.3.2 RACKMOUNTABLE MODEL

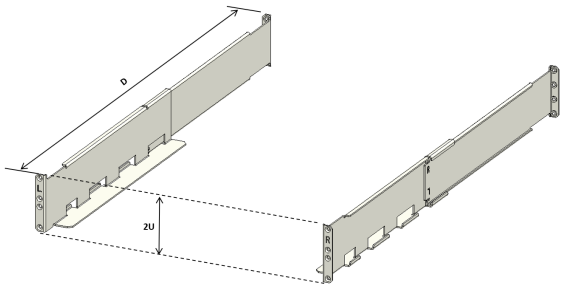
1. This model support 2 installation modes: Rack installation and Tower installation.
2. To keep good ventilation, please keep a free-space (500mm at least) for front / rear panels of the module.
3. Do not carry the unit by the front or rear panels of the module during installation.

Rack installation

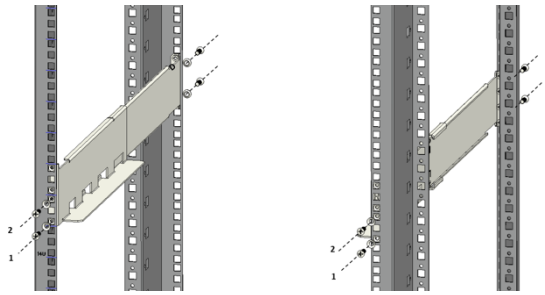
This procedure is suitable for 19 inches rack cabinet installation, it is recommended that the depth of the cabinet be no less than 800mm.

UPS model

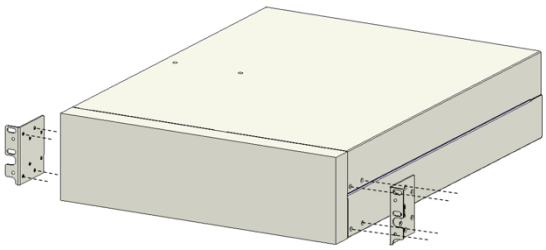
Identify the final position and keep '3U' space for this installation.



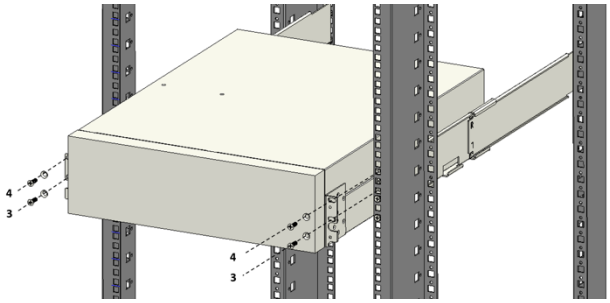
1. Install the rail kit (if configured). This rail kit is '2U with screw holes (M5)', the depth of the rail kit is: 443-773mm.



2. Fasten the rail kit to the cabinet with 8pcs M5 screws + washers (as below)



3. Install 'Rack ear" to the unit by the M4 screws (flat head).

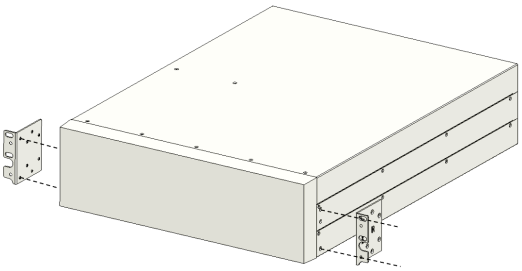


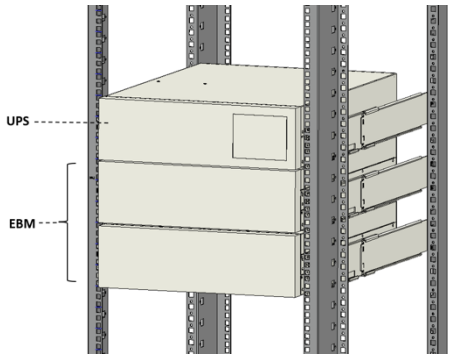
4. Slide the unit into the 'rail kit' and make sure to tighten the 'rack mounting screw'

EBM model

EBM modular installation steps are same as UPS above, Pay attention to this installation:

1. EBM modular must be installed on the lower level of the UPS (as shown below).
2. 2 EBMs are required for R 20kVA UPS, each EBM with a height of 3U; therefore, 6U installation space is required for 1complete EBM.

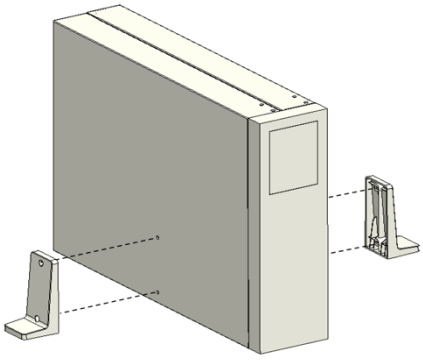


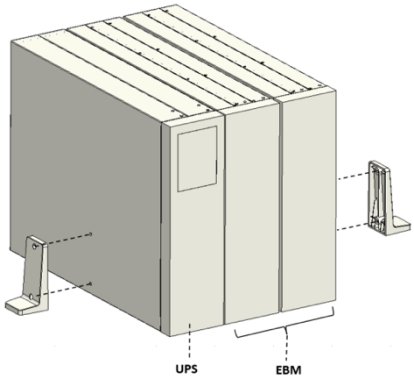


Tower Installation

UPS model

Screw the tower feet to the UPS: The LCD of this UPS modular has gravity sensing, the vision window will automatically adjust the display orientation.





EBM model

1. Place EBM modular to UPS's right side and align with front-panel.

2. Screw the UPS's tower foot: one is to UPS's side, another one to EBM's side (as above)

2 EBMs are required for R 20kVA UPS, please keep an enough space for installation.

3.4 POWER CABLES CONNECTION

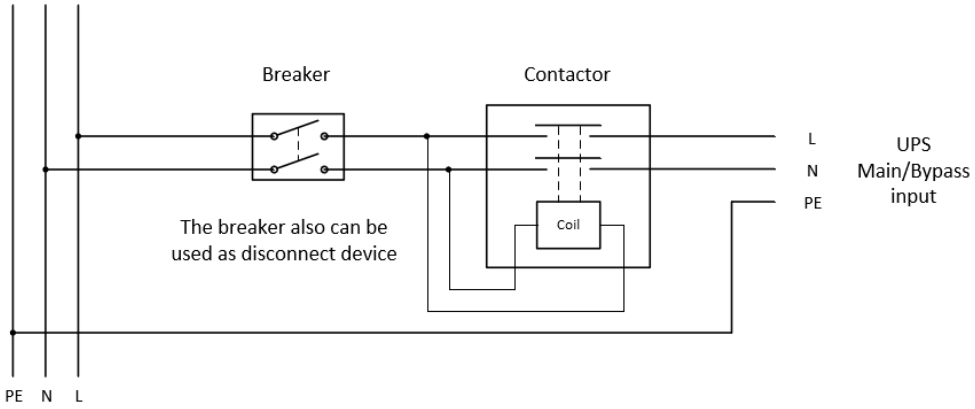
This chapter introduces how to wire AC IN/OUT cables to UPS in different mode, and UPS connecting with EBM/MBP.

3.4.1 INPUT /OUTPUT WIRING SPECIFICATION

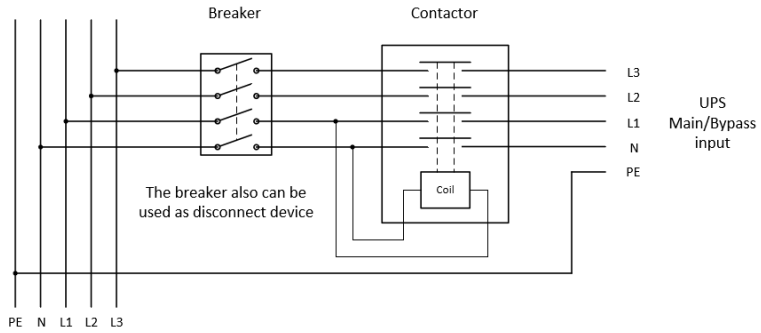
Before wring the UPS upstream breaker a backfeed contactor should be installed to avoid power backfeed to the UPS a 'backfeed voltage danger' warning label should be added on the backfeed contactor or device. Before operating the UPS input be isolated and measured to check correct voltages and polarity. Backfeed contactor current rating should be larger than that off the UPS input current rating.

Below figures show the wiring system of UPS input. Always adhear to the local wireing regulations and requirements for backfeed contactors

Single phase input system:



Three phase input system:



Danger!

The rated current of the utility power contactor must be greater than the UPS input current to avoid damage.

Recommended circuit breaker and contactor current specifications:

UPS power rating	Input mode	Breaker	Contactor
10kVA	1 phase main input	63A	≥63A
	3 phase main input	32A	≥32A
	1 phase bypass input	63A	≥63A
	3 phase bypass input	32A	≥32A
20kVA	1 phase main input	125A	≥125A
	3 phase main input	63A	≥63A
	1 phase bypass input	125A	≥125A
	3 phase bypass input	63A	≥63A

Recommended circuit breaker current specifications:

UPS power rating	Output mode	Breaker current
10kVA	1 phase output	63A
	3 phase output	32A
20kVA	1 phase output	125A
	3 phase output	63A

Recommended battery circuit breaker current specifications:

UPS power rating	Breaker current
10kVA	80A
20kVA	80A

Read the safety instructions regarding backfeed protection requirements

Recommended cable minimum cross-sectional area (unit: mm²)

UPS power rating	Input/ Output Mode	Input					Output			Battery	
		Main input		Bypass input		Ground wire					
		L wire	N wire	L wire	N wire		L wire	N wire	Ground wire	+/N/- wire	Ground wire
10kVA	3-3	4	4	4	4	10	4	4	4	10	10
	3-1	4	4	10	10	10	10	10	10	10	10
	1-1	16	16	10	10	16	10	10	10	10	10
20kVA	3-3	10	10	10	10	10	10	10	10	10	10
	3-1	10	10	25	25	25	25	25	25	10	10
	1-1	50	50	25	25	50	25	25	25	10	10

Note:

1. Please select the larger cross-section conductor for the UPS input cable in the single source application.
2. UPS output cable length is recommended not to exceed 10m.
3. In the three-phase output mode, if the load is an unbalanced load, the L wire of the bypass and output may exceed the rated current, and the maximum rated current will be 1.732 times. The corresponding protection device and wiring cable must be determined according to the standards of the region and the actual situation of the user.

3.4.2 Wiring for AC cable (AC source to UPS)

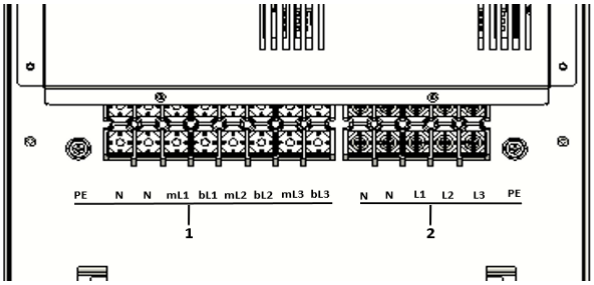
leakage current:
Earth connection essential before connecting supply.

This type of connection must be carried out by qualified electrical personnel.

Before carrying out any connection, check that the upstream protection devices (Normal AC source and Bypass AC source) are open 'O' (Off).

Tower model:

Remove the cover of the terminal block, layout of AC input/output:

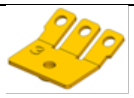
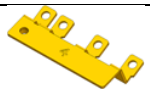
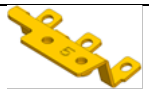
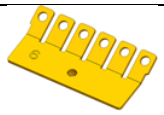
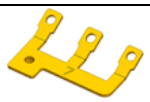


Note:

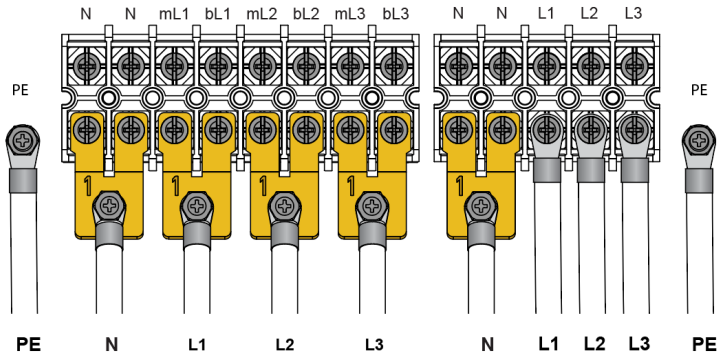
1. UPS input PE/N/N/ mL1/bL1/mL2/bL2/mL3/bL3 ('m' is main input, 'b' is bypass input)

2. UPS output: N/N/L1/L2/L3/PE

The UPS is supplied with busbars (as below) for 6 modes of wiring application, default is 3-3 mode (single source).

Busbars		Mode					
Item#	Figure	3-3 Single source	3-3 Dual source	3-1 Single source	3-1 Dual source	1-1 Single source	1-1 Dual source
1		5pcs	2pcs	2pcs	2pcs	2pcs	2pcs
3				1pc	1pc	1pc	1pc
4				1pc			
5					1pc		1pc
6						1pc	
7							1pc

Mode 3-3 (single source)



Input: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

Short terminal mL1/ bL1 with busbar #1, connect AC cable(L1);

Short terminal mL2/ bL2 with busbar #1, connect AC cable(L2);

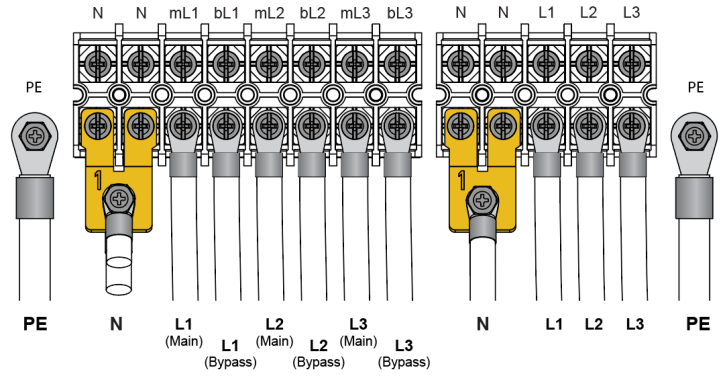
Short terminal mL3/ bL3 with busbar #1, connect AC cable(L3).

Output: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

Connect terminal L1/L2/L3 to AC cable(L1/L2/L3).

Mode 3-3 (dual source)



Input: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC main source cable(N) and bypass source cable(N);

Connect input terminal mL1/mL2/mL3 to main source cable(L1/L2/L3);

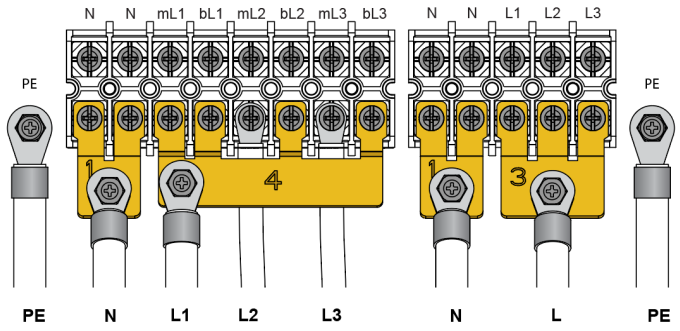
Connect bypass terminal bL1/bL2/bL3 to bypass source cable(L1/L2/L3).

Output: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

Connect terminal L1/L2/L3 to AC cable(L1/L2/L3).

Mode 3-1 (single source)



Input: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

Short input terminal mL1/bL1/bL2/bL3 with busbar #4, connect to AC cable(L1);

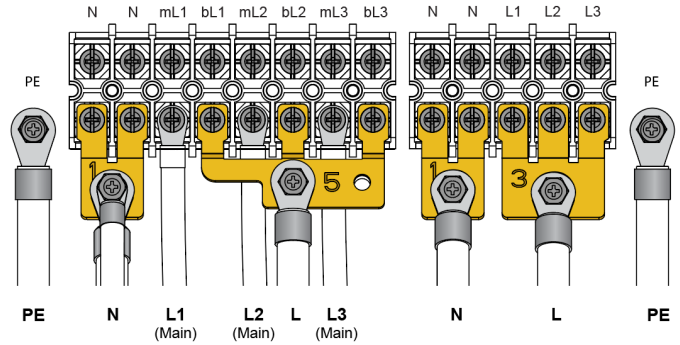
Connect terminal mL2 to AC cable(L2) and terminal mL3 to AC cable(L3).

Output: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

Mode 3-1 (dual source)



Input: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC main source cable(N) and bypass source cable(N);

Connect input terminal mL1/mL2/mL3 to main source cable(L1/L2/L3);

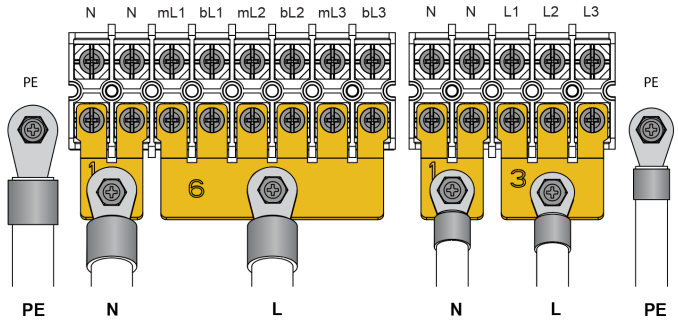
Short bypass terminal bL1/bL2/bL3 with busbar #5, connect bypass source cable(L).

Output: Connect ground cable (PE) to ground screw of chassis first;

Short terminal N/N with busbar #1, connect AC cable(N);

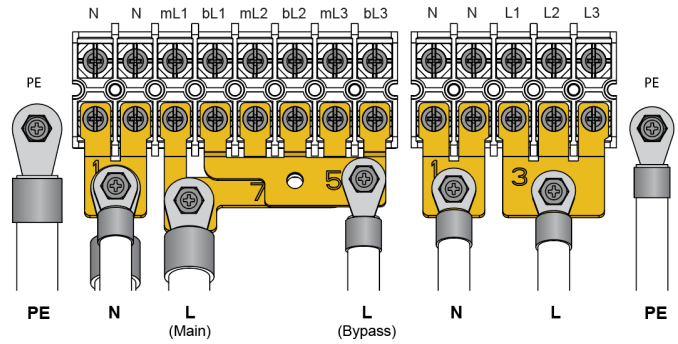
Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

Mode 1-1 (single source)



Input: Connect ground cable (PE) to ground screw of chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Short terminal mL1/bL1/mL2/bL2/mL3/bL3 with busbar #6, connect AC cable(L).
Output: Connect ground cable (PE) to ground screw of chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

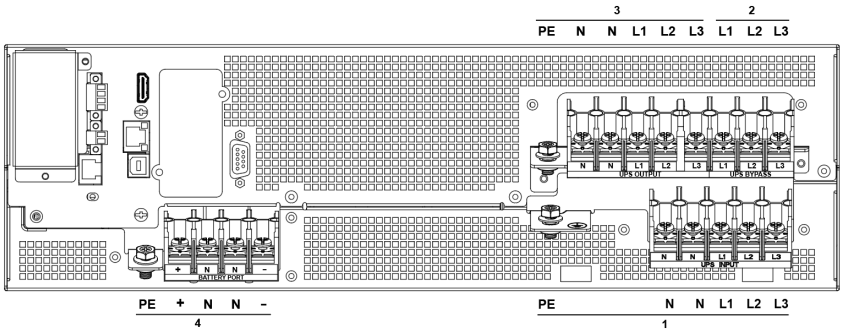
Mode 1-1 (dual source)



Input: Connect ground cable (PE) to ground screw of chassis first;
Short terminal N/N with busbar #1, connect AC main source cable(N) and bypass source cable(N);
Short input terminal mL1/mL2/mL3 with busbar #7, connect main source cable(L);
Short bypass terminal bL1/bL2/bL3 with busbar #5, connect bypass source cable(L).
Output: Connect ground cable (PE) to ground screw of chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

Rackmountable model

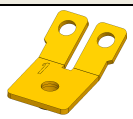
Remove the cover of the terminal block, layout of AC input/output as below:



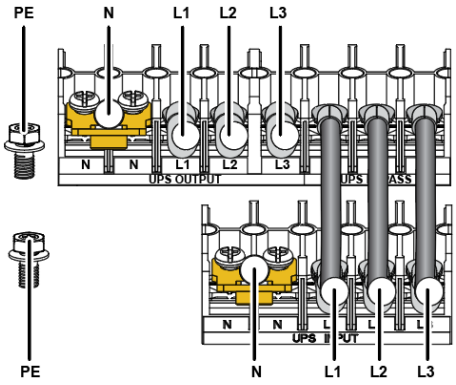
Note:

1. UPS input(PE/N/N/L1/L2/L3)
2. UPS bypass input(L1/L2/L3)
3. UPS output (PE/N/N/L1/L2/L3)
4. External battery port(PE/+/N/N/-)

UPS provide busbars and jumper cables as below for 6 modes of wiring application, default is Mode 3-3(single source).

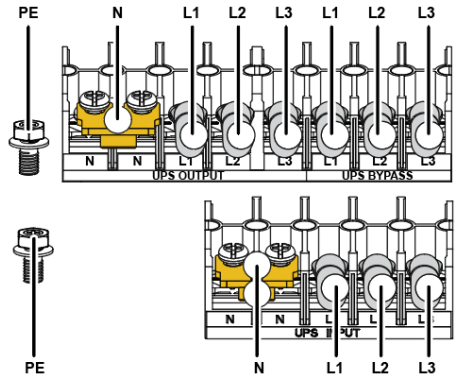
			Mode					
	Item#	Figure	3-3 Single source	3-3 Dual source	3-1 Single source	3-1 Dual source	1-1 Single source	1-1 Dual source
Copper busbar	1		2pcs	2pcs	2pcs	2pcs	2pc	2pcs
	2				2pcs	2pcs	2pcs	3pcs
Jumper cable			3pc		1pc		3pc	

Mode 3-3 (single source)



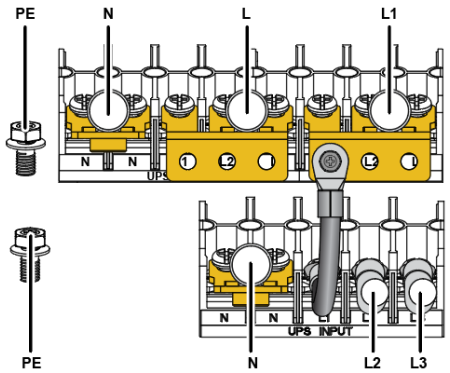
Input: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Connect input terminal L1/L2/L3 with AC cable(L1/L2/L3) and jumper cable, then fix 'jumper cable' to bypass terminal L1/L2/L3'.
Output: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, then connect AC cable(N);
Connect terminal L1/L2/L3' to AC cable(L1/L2/L3).

Mode 3-3 (dual source)



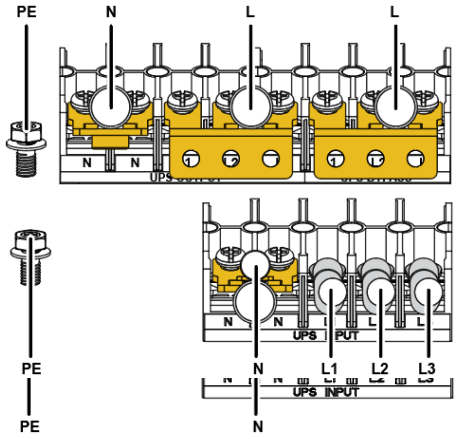
Input: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC main source cable(N) and bypass source cable(N);
Connect input terminal L1/L2/L3 to main source cable(L1/L2/L3) and bypass terminal L1/L2/L3 to bypass source cable(L1/L2/L3).
Output: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Connect terminal L1/L2/L3' to AC cable(L1/L2/L3).

Mode 3-1 (single source)



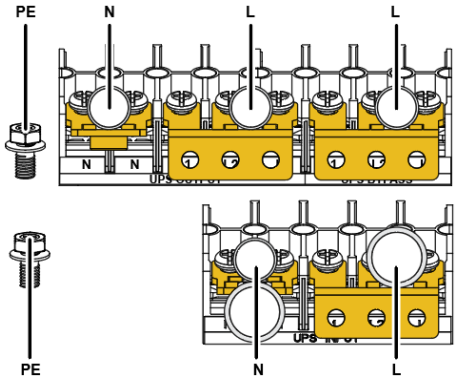
Input: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Connect input terminal L2/L3 to AC cable(L2/L3);
Fix 'jumper cable' to input terminal L1 and busbar #2, short bypass terminal L1/L2/L3 with this busbar #2, connect AC cable(L1).
Output: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Short terminal L1/L2/L3 with busbar #2, connect AC cable(L).

Mode 3-1 (dual source)



Input: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC main source cable(N) and bypass source cable(N);
Connect input terminal L1/L2/L3 to main source cable(L1/L2/L3);
Short bypass terminal L1/L2/L3 with busbar #2, connect bypass source cable(L).
Output: Connect ground cable (PE) to chassis first;
Short terminal N/N with busbar #1, connect AC cable(N);
Short terminal L1/L2/L3 with busbar #2, connect AC cable(L).

Mode 1-1 (dual source)

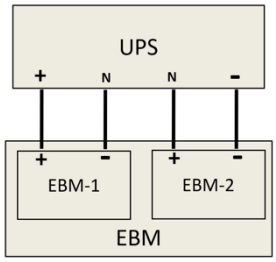


Input: Connect ground cable (PE) to chassis first;
Short terminal N/N with 'busbar #1', connect AC main source cable(N) and bypass source cable(N);
Short input terminal L1/L2/L3 with busbar #2, connect main source cable(L);
Short bypass terminal L1/L2/L3 with busbar #2, connect bypass source cable(L).
Output: Connect ground cable (PE) to chassis first;

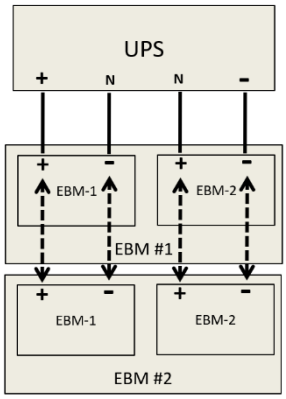
3.4.2 WIRING EXTERNAL BATTERY MODULE (EBM) (DC SOURCE TO UPS)

1. Be sure to disconnect the battery cable from the EBM before connecting the battery terminals of the UPS.
2. Make sure the UPS is completely off before connecting or disconnecting the EBM.
3. Before connecting the EBM, make sure that the EBM specifications is compatible with UPS configuration.
4. Do not reverse the polarity of the external battery.

EBM wiring schematic diagram is shown below:



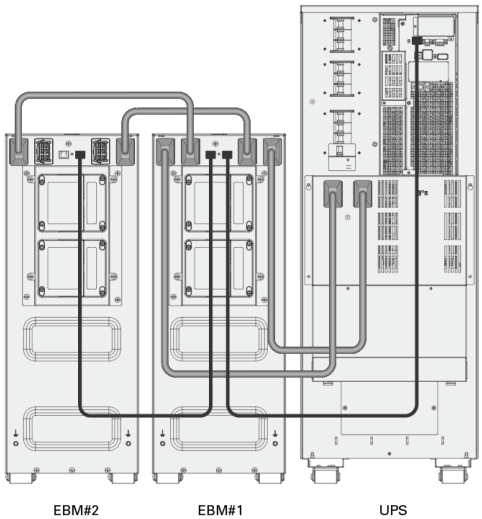
Single set of EBM



Multiple sets of EBM

Connect EBM to UPS with 'Battery cable' and 'EBM detect cable.'

Tower EBM



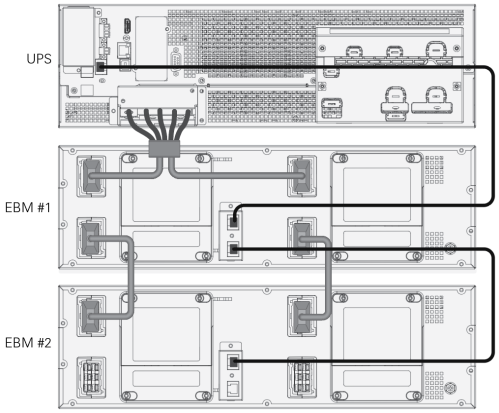
Note

EBM automatic detection function supports up to 3 EBMs for tower 10kVA UPS. For more EBM quantity (max up to 6), need to configure the battery capacity in LCD.

Extend runtime with up to 6 EBMs for each 20kVA UPS

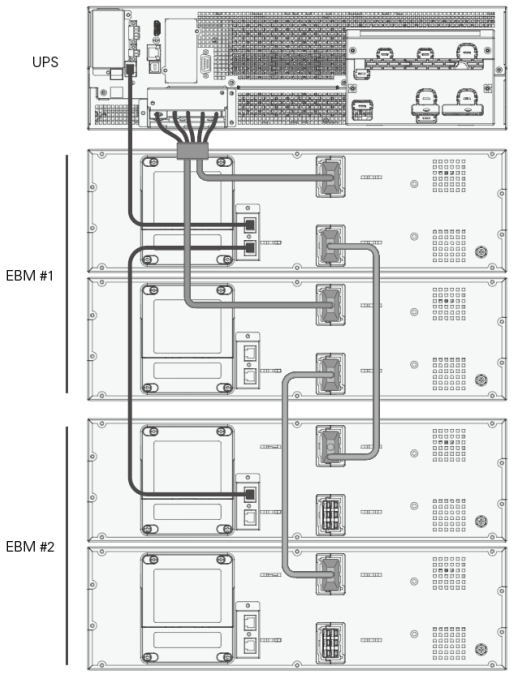
Rackmountable EBM

For 10kVA UPS



Note: Extend runtime with up to 6 EBMs for each 10kVA UPS

For 20kVA UPS

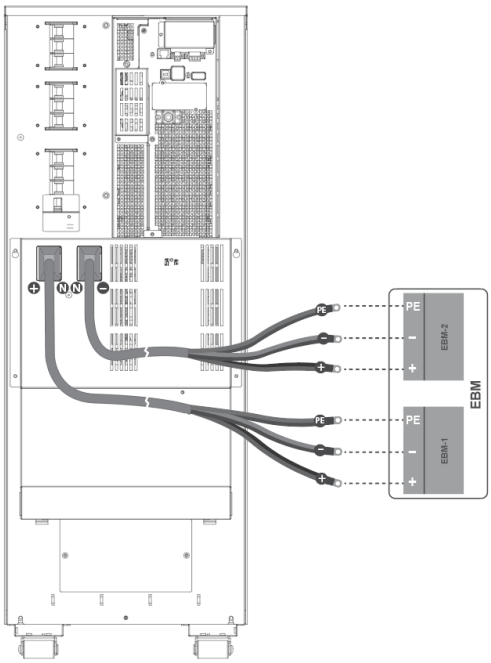


Note: Extended runtime with up to 6 sets of EBM for each R 20kVA UPS.

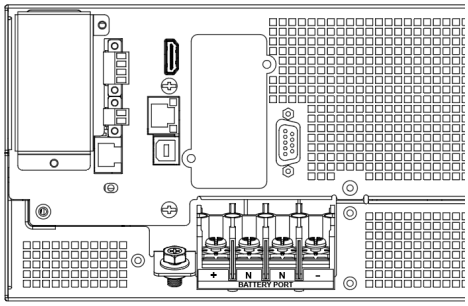
Connect with user's own EBM:

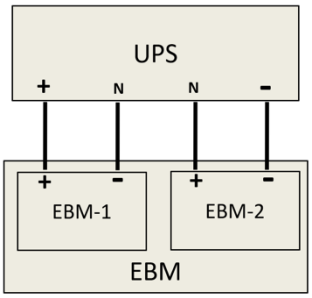
Tower model:

Connect user's own EBM or external batteries to UPS with 'Battery cable'(if configured).



Rackmountable model:



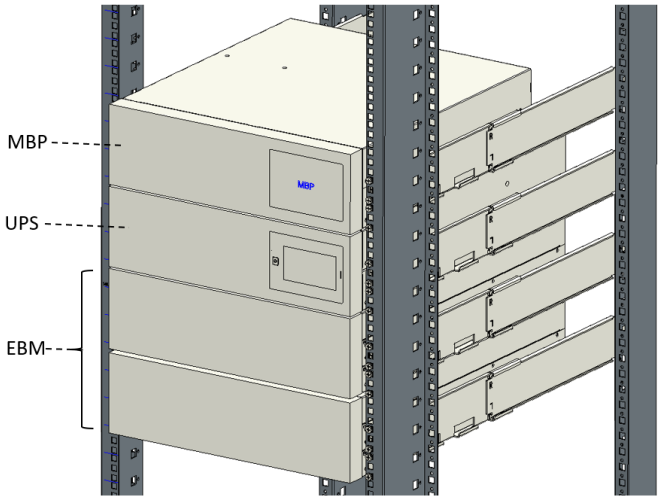


Note:

1. The EBM must be grounded individually or grounded to the UPS
2. If additional battery cable needed for installation, it must follow cable specification and the maximum length of battery cable 10 meters
3. DC breaker or DC fuse is required for each EBM

3.4.3 Wiring with Rackmountable bypass

The rackmount bypass is an optional module, The UPS can be used with the bypass to implement the maintenance bypass switching function to ensure that the output of the system is not affected during the UPS maintenance.

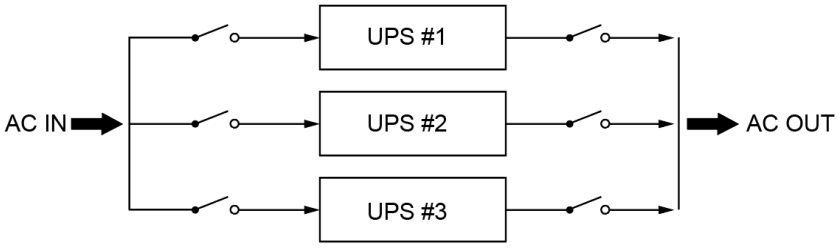


4. PARALLEL SYSTEM INSTALLATION AND OPERATION (OPTIONAL)

If your UPS is configured with parallel function, up to 3 UPSs can be connected in parallel to configure a sharing and redundant output power.

In parallel system, the mechanical installation for each module is the same as a single system. For details please refer to Chapter 3.3.

Parallel system AC cable diagram:



4.1 WIRING FOR AC/DC CABLE

1. Wiring length requirement:

When the distance between the load and the parallel UPS is less than 10 meters, the length difference between the input/output lines between the UPSs in the parallel system is less than 20%.
When the distance between the load and the parallel UPS is greater than 20 meters, the length difference between the input/output lines between the UPSs in the parallel system is less than 5%.

2. Professional installation is required.
This chapter introduces how to wire AC IN/OUT cable to UPS in parallel system, and UPS connecting with EBM/MBP.

4.1.1 Input/Output wiring specifications

Cable select table for the parallel system AC IN, AC OUT and Battery wire:

Parallel system installed by 10kVA UPS (conductor cross-section, unit: mm²)											
UPS number	Mode	Main input		Bypass input		Ground wire	Output			Battery wire	Battery ground
		L wire	N wire	L wire	N wire		L wire	N wire	Ground		
2 UPS	3-3	10	10	6	6	10	6	6	6	35	35
	3-1	10	10	25	25	25	25	25	25	35	35
	1-1	50	50	25	25	50	25	25	25	35	35
3 UPS	3-3	16	16	10	10	16	10	10	10	70	70
	3-1	16	16	50	50	50	50	50	50	70	70
	1-1	95	95	50	50	95	50	50	50	70	70

Parallel system installed by 20kVA UPS (conductor cross-section, unit: mm²)											
UPS number	Mode	Main input		Bypass input		Ground wire	Output			Battery wire	Battery Ground
		L wire	N wire	L wire	N wire		L wire	N wire	Ground		
2 UPS	3-3	25	25	16	16	25	16	16	16	35	35
	3-1	25	25	70	70	70	70	70	70	35	35
	1-1	120	120	70	70	120	70	70	70	35	35
3 UPS	3-3	50	50	25	25	50	25	25	25	70	70
	3-1	50	50	150	150	150	150	150	150	70	70
	1-1	240	240	150	150	240	150	150	150	70	70

Note:

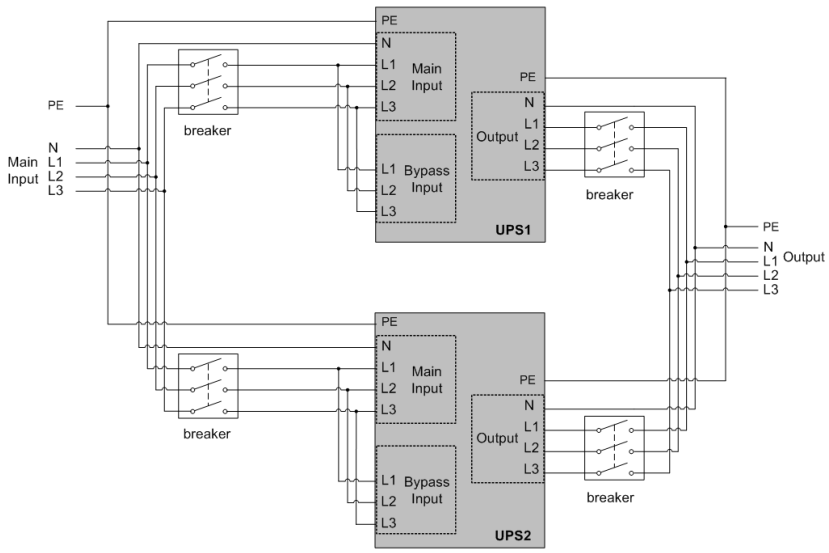
1. Please select the larger cross-section conductor for the parallel system 'AC IN cable' in the single source application.

2. In the three-phase output mode, if the load is an unbalanced load, the L wire of the bypass and output may exceed the rated current, and the maximum rated current will be 1.732 times. The corresponding protection device and wiring cable must be determined according to the standards of the region and the actual situation of the user.

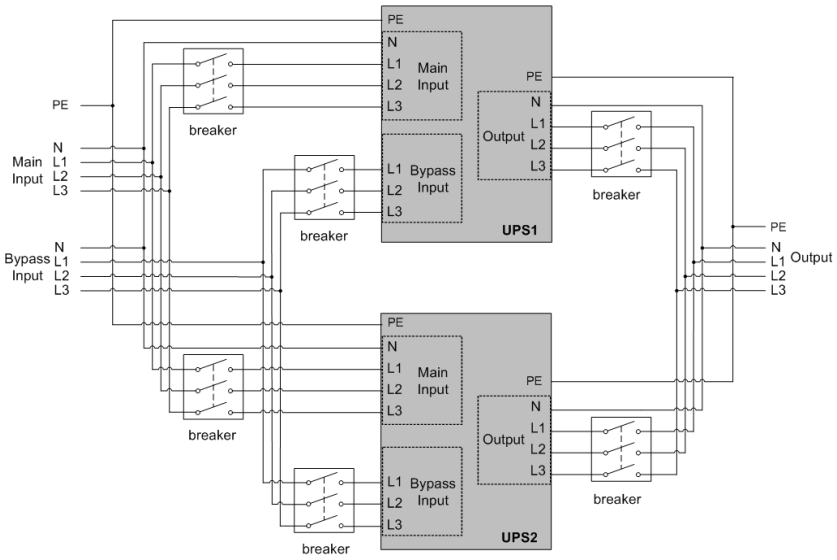
4.1.2 Wiring for AC cable (AC source to UPS)

AC cable wiring is shown in below diagrams for different configuration

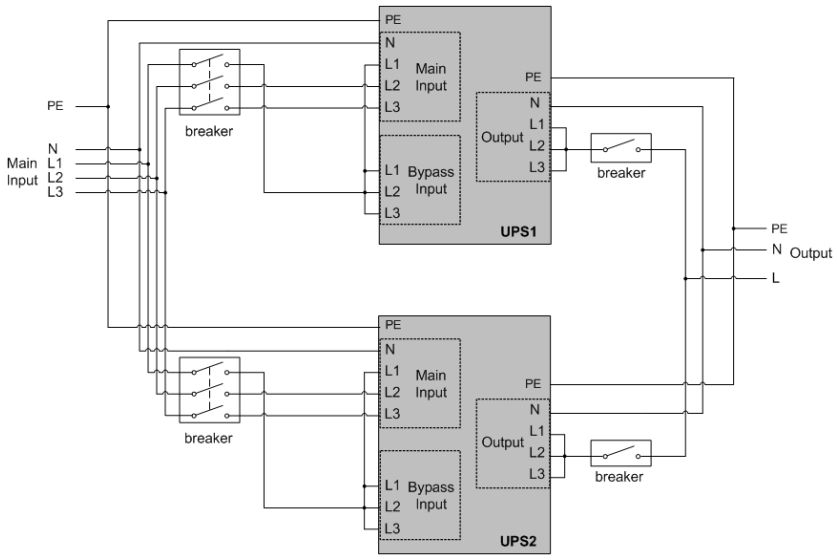
3-3 configuration (single source)



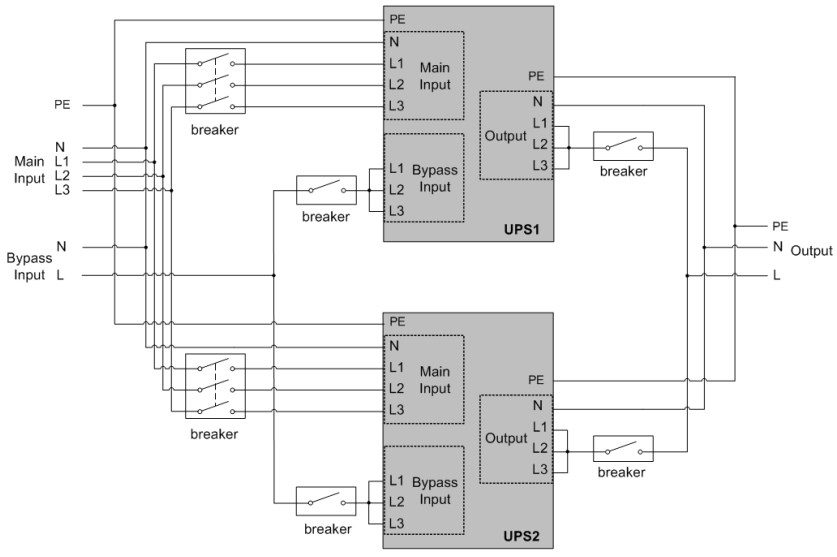
3-3 configuration (dual source)



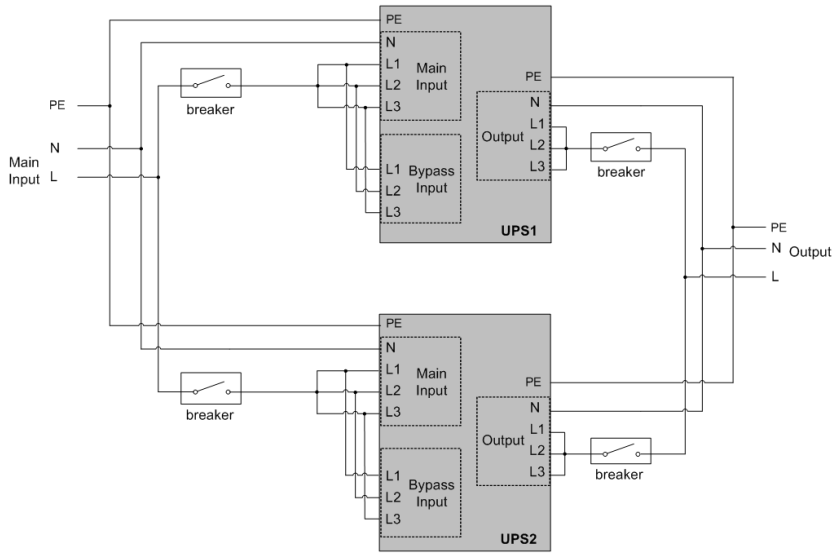
3-1 configuration (singlel source)



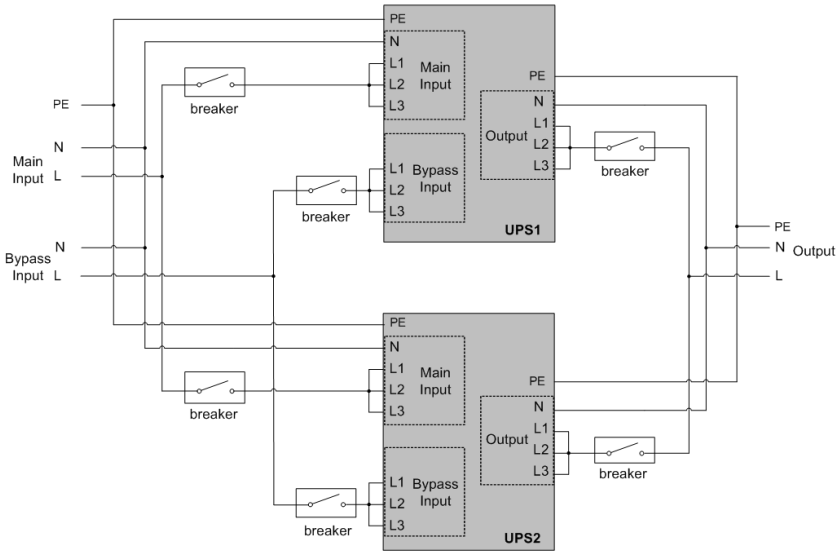
3-1 configuration (dual source)



1-1 configuration (single source)



1-1 Configuration (dual source)



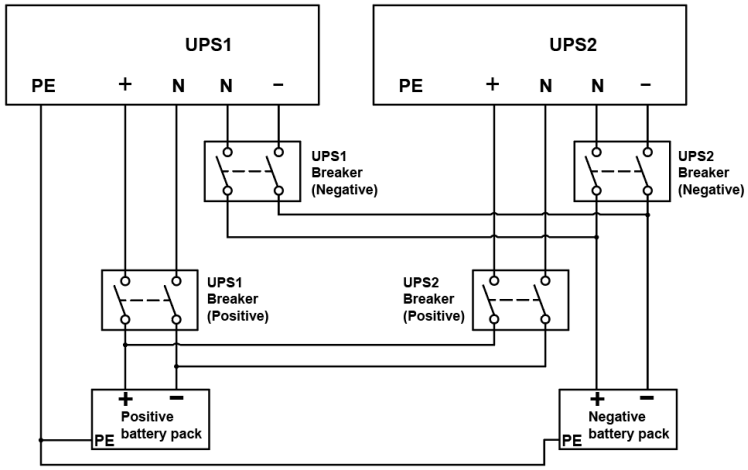
4.1.1.1 WIRING WITH EXTERNAL BATTERY MODULE (EBM) (DC SOURCE TO UPS)

Parallel UPS connection with 'independent batery'

In the parallel system, independent EBM connect to each UPS. Please refer to chapter 3.4.3

Parallel UPS connection with 'common battery'

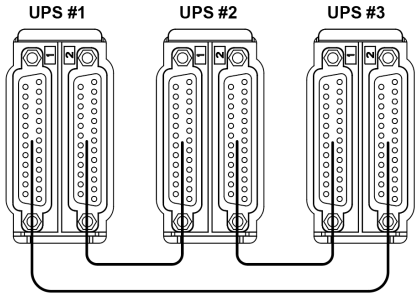
In the parallel system, you can also set up 'common battery'(user's own battery) for all UPSs. Please refer to below diagram for battery wiring.



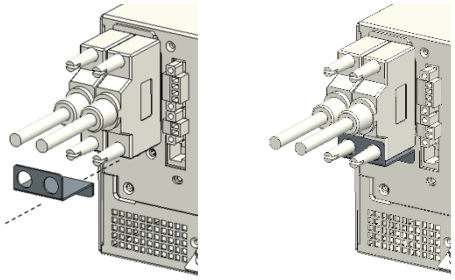
Note: Common battery configuration is not suitable for standard model.

WIRING FOR PARALLEL SIGNAL CABLE

Parallel system 'parallel cable' diagram:



Connect each UPS one by one with 'parallel cable', make sure the cable is screwed to parallel port tightly.



It is recommended to lock the 'parallel cable' (as above) for preventing the parallel ports suffering an unexpected pulling-force and causing the parallel system fault.

PARALLEL SYSTEM OPERATION

1. Turn on the input breakers for the parallel UPS.

2. Pressing ⏻ button continuously for one UPS of the system, then the system will start to turn on and enter line mode.

3. Regulate the output voltage of each UPS separately, and check if the output voltage difference is less than 0.5V among the parallel system. If the difference is more than 0.5V, the UPS need to calibrated.

4. If the output voltage difference is less than 0.5V, pressing ⏻ button continuously for one UPS of the system to turn off the system. Turn off the input breakers to let UPS shut down. Then switch on the output breakers for all the UPS.

5. Turn on the input breakers for the parallel UPS. Pressing ⏻ button continuously for one UPS of the system, then the system will start to turn on and enter line mode and the system will work normally in parallel.

5. OPERATION

5.1 LCD PANEL

The UPS has a touch graphical LCD. It provides useful information about the UPS itself, load status, events, measurements and settings.

The LED:

LED status	description	UPS status
	Red on	Fault mode
	Red flash	General alarm
	Yellow on	Battery mode
	Yellow flash	Bypass mode with output
	Green on	Line mode or HE mode
	off	No output (power on/shutdown/bypass without output)

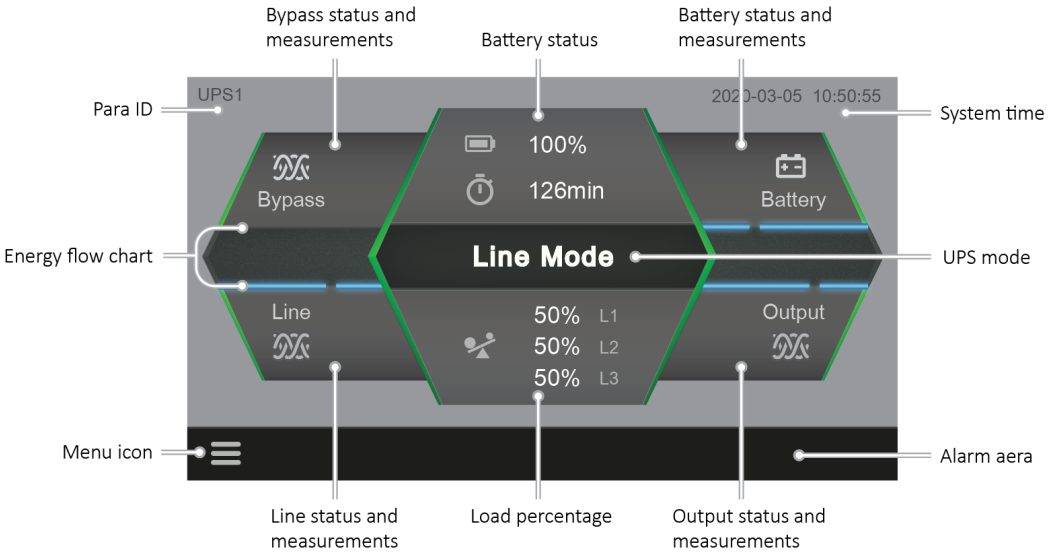
The Button:

button	function	description
	On/off	When only battery power is available, press to power on When UPS is not turned on, pressing this key to turn on When working normally, press to pop up the shutdown page When the UPS is in fault mode, press to clear the fault (some faults cannot be cleared directly)

The Buzzer：

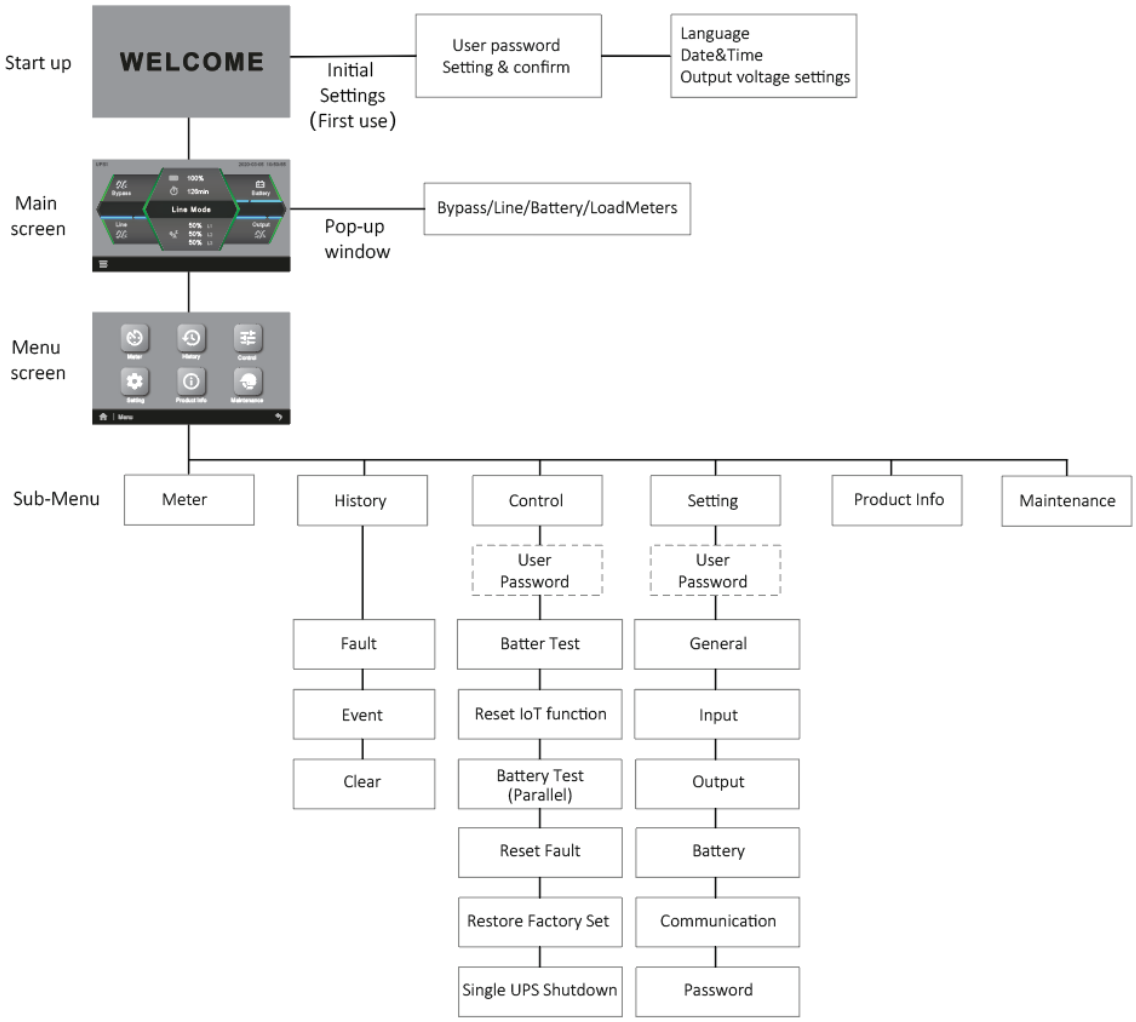
The buzzer	General Meaning
1 beep every 2 minutes	Load supplied on bypass
1 beep every 4 seconds	Load supplied on battery If battery low, beep every second
1 beep every second	General warning active
2 beeps every second	Overload warning
Continuous	Fault active

5.2 LCD DESCRIPTION



Display Area	Icon	Description
Battery status	100% 126min	Battery capacity Backup time
UPS mode	Line Mode	The work mode of the UPS
Load percentage	50% 50% L1 50% L2 50% L3	When it is 3 phase output, the load for each of the 3 phases is displayed in this area
Bypass status and measurements	Bypass Bypass	Different icon shows the phase number of bypass Click on this icon will bring up a popup of measurements of the bypass
Battery status and measurements	Battery	Click on this icon will bring up a popup of measurements of the battery
Line status and measurements	Line Line	Different icon shows the phase number of Utility Click on this icon will bring up a popup of measurements of the utility
Output status and measurements	Output Output	Different icon shows the phase number of output Click on this icon will bring up a popup of measurements of the output
Energy flow chart		The sick solid line means there is energy flow, the double thin line means nothing
System time	2020-03-05 10:50:55	It can be set in user settings
Menu icon		Click on this icon can entry the menu screen
Alarm area		When UPS enters fault mode, fault ICON and the fault information will be displayed. If alarms exist, alarm information will scroll for up to 4 messages, each for 2 seconds
Para ID	UPS1	The UPS ID number in parallel system (1-3), keep 1 in single mode

5.3 MENU STRUCTURE



5.4 CONTROL AND PRODUCT INFORMATION

Main menu	Submenu	Menu function
Control	Battery test	Starts a manual battery test in stand-alone mode
	Reset IoT function	Reset IoT function inside UPS
	Battery test (Parallel)	Starts a single battery test in parallel mode
	Reset fault	Clear active fault
	Reset factory setting	Restore to default factory settings
	Single UPS shutdown	Operate this machine to exit parallel connection
Product Info	UPS model	Model name & input/output phase
	Serial number	Serial number of UPS
	UPS firmware version	Version of UPS firmware
	LCD firmware	Version of UI

	JHD-APP version	Version of LCD driver
	Communication card firmware version	Version of IoT
	Ethernet IP	IP address of ethernet
	Ethernet MAC	MAC address of ethernet
	WLAN IP	IP address of WLAN
	WLAN MAC	MAC address of WLAN

5.5 USER SETTINGS

Setting		**Options on the display**	**Default**
General	Audible Alarm	[Enabled], [Disabled]	Enabled
	Date/Time	YYYY-MM-DD HH:MM	2020-1-1
	Language	English, Italiano, Français, Deutsch, Español, Русский, Polski, 简体中文	English
	LCD brightness	[0%-100%]	100%
	LCD saving mode	[Enabled], [Disabled]	Enabled
	Screen rotation	[Auto Rotate], [Horizontal], [Vertical]	Auto Rotate
Input	Site wiring fault (1)	[Enabled], [Disabled]	Disabled
	Bypass voltage low limit	110 ~ (V_inverter - 15V)	187V
	Bypass voltage high limit	(V_inverter + 15V) ~ 276V	264V
	Bypass frequency low limit	-10%~-5%	-10%
	Bypass frequency high limit	5%~10%	10%
	HE voltage low limit	-15%~-5%	10%
	HE voltage high limit	5%~20%	10%
	HE frequency low limit	-10%~-5%	5%
	HE frequency high limit	5%~10%	5%
	Dual input function	[Enabled], [Disabled]	Disabled
Output	UPS Mode	[Normal mode], [HE mode], [CVCF mode]	Normal mode
	Output voltage	[220V], [230V], [240V]	230V
	Output frequency	[Auto detection], [50Hz], [60Hz]	Auto detection
	ESS function	[Enabled], [Disabled]	Disabled
	Auto bypass	[Enabled], [Disabled]	Enabled

Setting		Options on the display	Default
	Auto restart	[Enabled], [Disabled]	Enabled
	Short circuit auto clear	[Enabled], [Disabled]	Disabled
	Overload pre-alarm	50%~105%	105%
Battery	DC Start	[Enabled], [Disabled]	Enabled
	Battery Auto Test	[Every cycle] [Disabled]	Every cycle
	Deep discharge protection	[Enabled], [Disabled]	Enabled
	Low bat warning	0%~100%	0%
	Low remaining time warning	0-999min	0min
	Restart battery level	0~100%	0%
	Charger current	[1-13A]	[4A] for 10-20KS [1.4A] for 15K [2A] for 10K/20K
	External battery setting	[Auto detection], [Manual AH setting] Manual AH setting: [9-300AH]	[Auto detection] /
Communication	Dry in	[No function] [Start UPS] [Remote shut down] [Maintenance bypass]	No function
	Dry out	[load powered] [on battery] [Low battery] [No Battery] [Bypass] [ups OK]	load powered
	IoT function	[Enabled], [Disabled]	Disabled
	Modbus TCP	[Enabled], [Disabled]	Disabled
Password	Control Menu password	[Enabled], [Disabled]	Enabled
	Setting Menu password	[Enabled], [Disabled]	Enabled
	Change Password	Old password New password Confirm password	[4314]

(1) Site wiring fault function is only for single phase bypass input. If the utility power is IT system, the site wiring fault function should be disabled.

5.5 STARTING UP THE UPS WITH UTILITY

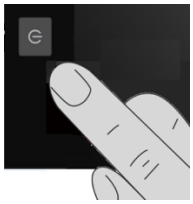
Startup preparation:

> Before startup the UPS, please make sure that the wiring is securely connected, otherwise there is a danger of electric shock.

- Verify that the total UPS output load does not exceed the rated capacity of the UPS.
- The wiring of the UPS input and output is correctly connected according to the required mode.
- Confirm that the UPS output device is not started.
- Make sure the UPS is reliably connected to the battery.
- Connect communication interfaces that need to be used.

Startup the UPS with utility power:

1. Turn on input breaker and output breaker.
2. The fan starts to rotate, the LCD displays startup animation, then enters the main page.
3. UPS default Bypass enable, the main page shows UPS working in bypass mode.
4. The default input/output mode is three-input and three-out. If it is inconsistent with the actual wiring, it needs to be changed to the actual wiring mode.
5. Press the button for more than 1 second, the buzzer will beep and the UPS will start up. After a few seconds, the UPS will go to normal mode.



6. If the utility power is abnormal, the UPS will transfer to Battery mode.
7. When the battery is not connected, the UPS can still be startup. After the startup, there is alarm of battery not connected. If the utility power is abnormal, the UPS load will not be protected.
8. The load is powered by the UPS and the LCD shows a charging sign indicating that the battery is charging.
9. Startup the output device.

> If you want to cancel the Bypass enable function, please refer to chapter “User setting”.

Changing Input/Output mode

The input/output mode is modified by the service personnel:

1. Pull out the RPO connector.
2. Turn on input breaker, check the UPS mode in the LCD. If it is different from the actual wiring mode, change to the actual wiring mode.
3. Power off the UPS completely. Then power on, confirm that the mode is set correctly.
4. Power off the UPS again, insert the RPO terminal.

5.6 STARTING THE UPS ON BATTERY

> Before using this feature, the UPS must have been powered by utility power with output enabled at least once.

Battery start can be disabled. See the "DC start" setting in "Battery/DC Start".

To start the UPS on battery:

1. Press the button for more than 0.1 seconds. The UPS establishes the power, the fan starts to rotate, the LCD displays the startup animation, and then enters the main page to display the standby mode.
2. If there is no operation, the LCD is off out after 10 seconds and the UPS is powered down.
3. Press the button for more than 1 second, the buzzer will beep and the UPS will startup. The UPS will go to battery mode after a few seconds.
4. If the utility power is connected at this time, the UPS will switch to the line mode and the output will be uninterrupted.
5. UPS works in battery mode, and the buzzer beep for 4 seconds to remind that the battery is discharged.
6. Since there is no utility power input, the input abnormal alarm will be displayed on the LCD.

5.7 UPS SHUTDOWN

Shutdown the UPS with utility power mode:

1. UPS working with utility power, press the button for more than 3s, the LCD pops up to confirm the shutdown page.
2. After clicking Confirm, the UPS performs shutdown.
3. After shutdown, the UPS works in bypass mode and the output remains powered.
4. If there is no need the UPS output, disconnect the input utility power.

Shutdown the UPS with battery mode:

1. Press the button for more than 3s, the LCD pops up to confirm the shutdown page;
2. After clicking Confirm, the UPS performs shutdown.
3. The UPS output is interrupted and goes into standby mode. After a few seconds, the UPS automatically shuts down.

6 COMMUNICATION

6.1 RS232 AND USB

1. Communication cable to the serial or USB port on the computer.
2. Connect the other end of the communication cable to the RS232 or USB communication port on the UPS.

6.2 UPS REMOTE CONTROL FUNCTIONS

Remote Power Off (RPO)

When RPO is activated, UPS will cut off output immediately, and continues to alarm.

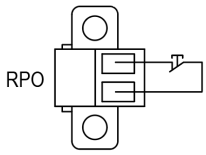
RPO	Comments
Connector type	1.3mm Maximum wires
External breaker specification	60 V DC/30 V AC 20 mA max

Reset :

1 Check the RPO connector status;

2. Clear fault state through LCD.

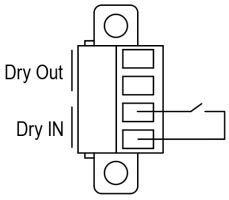
.



Dry in

Dry in function can be configured (see Settings > Dry in)

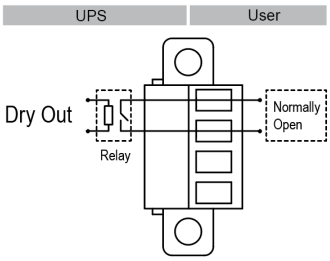
Dry in	Comments
Connector type	1.3mm Maximum wires
External breaker specification	60 V DC/30 V AC 20 mA max



Dry out

Dry out is the relay out, dry out function can be configured. (see Settings > Dry out)

Dry out	Comments
Connector type	1.3mm Maximum wires
Inner Relay specification	24Vdc/1A



6.3 IoT (INTERNET OF THINGS)

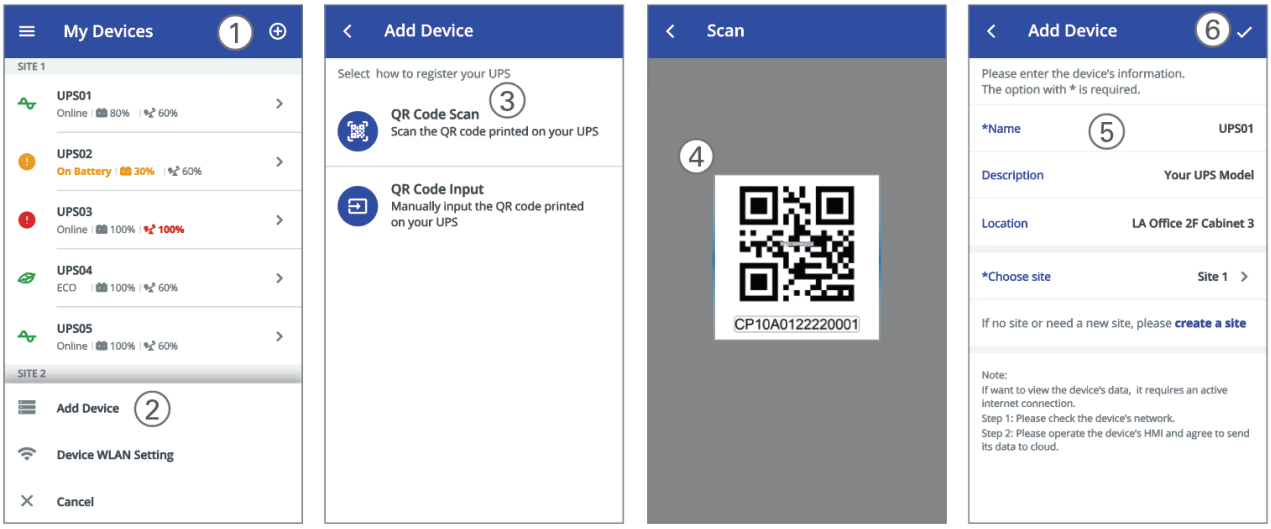
The built-in ethernet port and WLAN port (C-WIFI) (optional accessary) enable market-leading and easy-to-use IoT solutions for:

- CertaUPS App - Mobile app which allows you to remote monitor UPS(s) and keep informed about critical UPS event always.
- Remote report UPS faults and status (contact with your service for detail) from APP or registered APP account (Email address).
- Automatic UPS and battery warranty alert from APP or registered APP account (Email address).

IoT Connection

Wired connection

1. Connect UPS and router or switch with network cable
2. Enable the IoT function in LCD (see Settings -> IoT)
3. Search for CertaUPS app from Google Play store or Apple APP store, download and install.
4. Open the app, register an account, log in, follow the instructions of the app.
5. Tap ⊕ on the upper right corner, scan the SN barcode on UPS label to add device.



For more detailed information and Q&A about the IoT and APP, please refer to the HELP menu in the APP

Wireless connection

The wireless module is optional, please contact your local CertaUPS representative for details

6.4 MODBUS TCP

Built-in ethernet port offers Modbus TCP feature to facilitate remote monitoring of the UPS into your own software. Please contact your local CertaUPS representative for product details.

6.5 INTELLIGENT CARD (OPTIONAL)

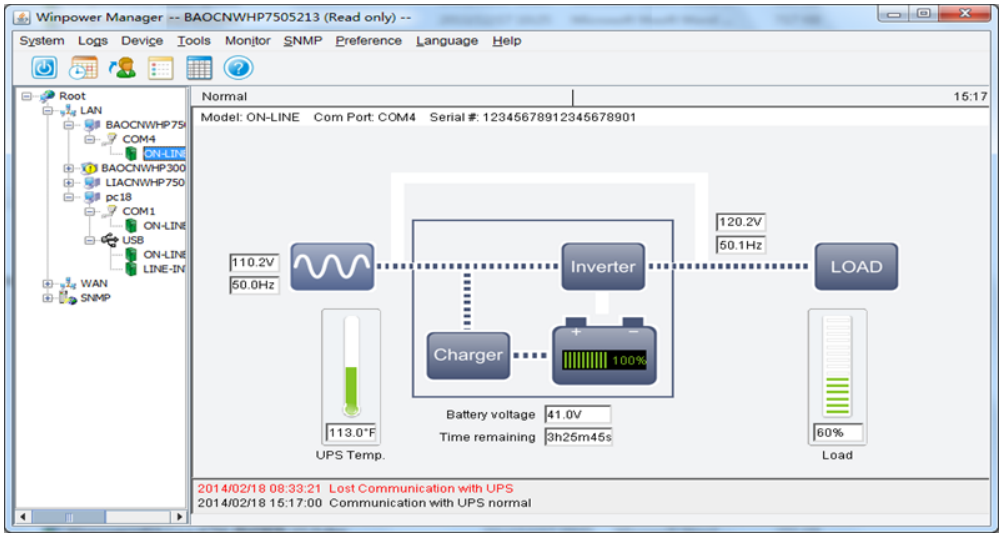
Intelligent Card allow the UPS to communicate with different types of devices in variety of networking environments. The UPS could use the following connectivity cards, please contact your local distributor for details.

- **C-NMC card** - Ideal monitoring solution enables user to monitor and control the status of UPS on web browser via internet.
- **C-Modbus card** -provides connection to Modbus protocol with standard RS485 signal.
- **C-Relay card** - Provides voltage-free dry-contact signals for programmable controller and management system.

6.6 UPS MANAGEMENT SOFTWARE

6.6.1 WINPOWER

WinPower provides user-friendly interface to monitor and control your UPS. This unique software provides safe auto shutdown for multi-computer systems during a power failure. With this software, users can monitor and control any UPS on the same LAN no matter how far from the UPSs.



Installation procedure:

1. Go to the website: http://www.ups-software-download.com/content/ups-download-software/download.html
2. Choose the operation system you need and follow the instruction described on the website to download the software.
3. When downloading all required files from the internet, Please enter the serial number below to install the software.

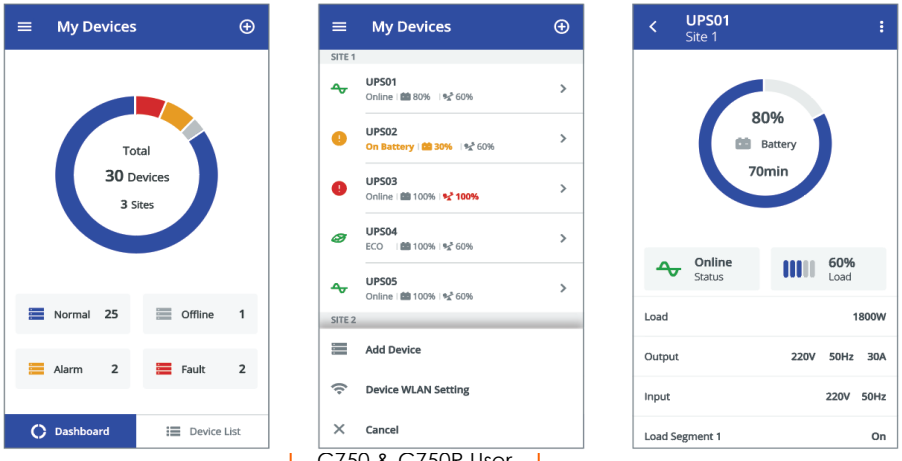
Serial number: 511C1-01220-0100-478DF2A

When you finish installation, restart your computer, the WinPower software will appear as a green plug icon located in the system tray, near the clock.

6.6.2 CertaUPS APP

The CertaUPS app is a mobile app which allows you to centralized monitoring UPS(s) connected to cloud. Please download it from Google Play store or Apple APP store.

Please refer to the chapter 5.3 for IoT connection.



7. UPS MAINTENANCE

7.1 EQUIPMENT CARE

For the best preventive maintenance, keep the area around the equipment clean and dust free. If the atmosphere is very dusty, clean the outside of the system with a vacuum cleaner.

For full battery life, keep the equipment at a maximum ambient temperature of 25°C (77°F).

The batteries are rated for a 3to5-year service life. The length of service life varies, depending on the frequency of usage and ambient temperature. Batteries used beyond expected service life will often have severely reduced runtimes. Replace batteries at least every 4 years to keep units running at peak efficiency.

7.2 TRANSPORTING THE UPS

Please transport the UPS only in the original packaging. If the UPS requires any type of transportation, verify that the UPS is disconnected and turned off.

7.3 STORING THE EQUIPMENT

If you store the equipment for a long period, recharge the battery every 6 months by connecting the UPS to utility power. Recommends that the batteries charge for 48 hours after long-term storage.

If batteries were never recharged over 6 months, do not use them. Contact your service representative.

7.4 RECYCLING

Contact your local recycling or hazardous waste center for information on proper disposal of the used equipment.

Do not dispose of the batteries in the fire. Which may cause battery explosion. The batteries must be rightly disposed according to local regulation.

Do not open or destroy the batteries. Escaping electrolyte can cause injury to the skin and eyes. It may be toxic.

Do not discard the batteries in the trash.
This product contains sealed lead acid batteries and must be disposed as it's explained in this manual. For more information, contact your local recycling centers, re-use and treatment facilities.

Pb

The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment (WEEE) should not be discarded together with unseparated household waste but must be collected separately. The product should be handed in for recycling in accordance with the local environmental regulations for waste disposal.

By separating waste electrical and electronic equipment, you will help reduce the volume of waste sent for incineration or landfills and minimize any potential negative impact on human health and environment.

8. TROUBLESHOOTING

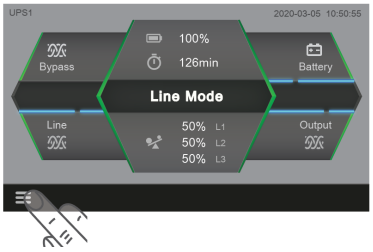
The UPS is designed for durable, automatic operation and also alert you whenever potential operating problems may occur. Usually the alarms shown by the control panel do not mean that the output power is affected. Instead, they are preventive alarms intended to alert the user.

- Events are silent status information that are recorded into the Event log. Example = "Battery charging".
- Alarms are recorded into the Event log and displayed on the LCD status screen with the logo blinking. Some alarms may be announced by a beep every 1 second. Example = "Battery low".
- Faults are announced by a continuous beep and red LED, recorded into the Event log. Example = Output short circuit.

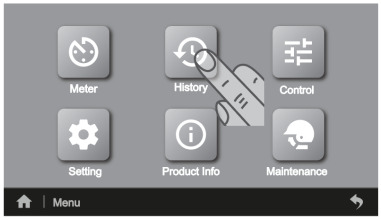
Use the following troubleshooting chart to determine the UPS alarm condition.

8.1 TYPICAL ALARMS AND FAULTS

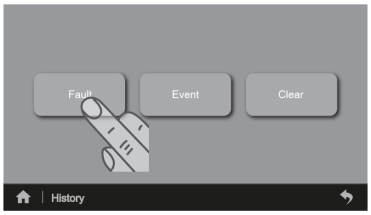
To check the fault log or event log:



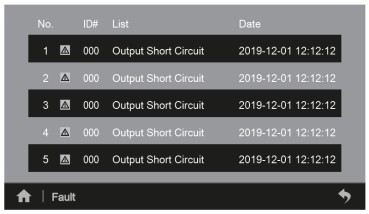
Click on **"Menu"** icon



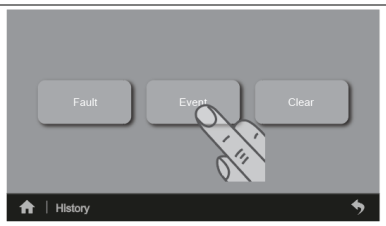
Click on **"History"** icon



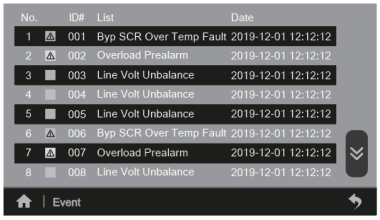
Click on **"Fault"** icon



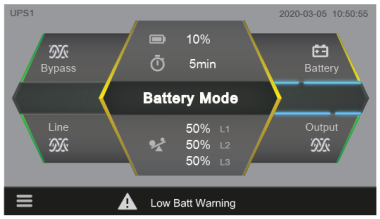
Last 5 faults, blank list if no fault

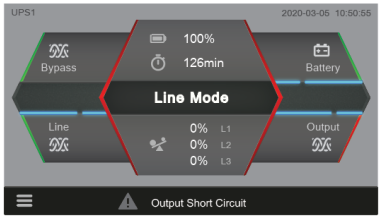


Click on **"Event"** icon



Last 100 events





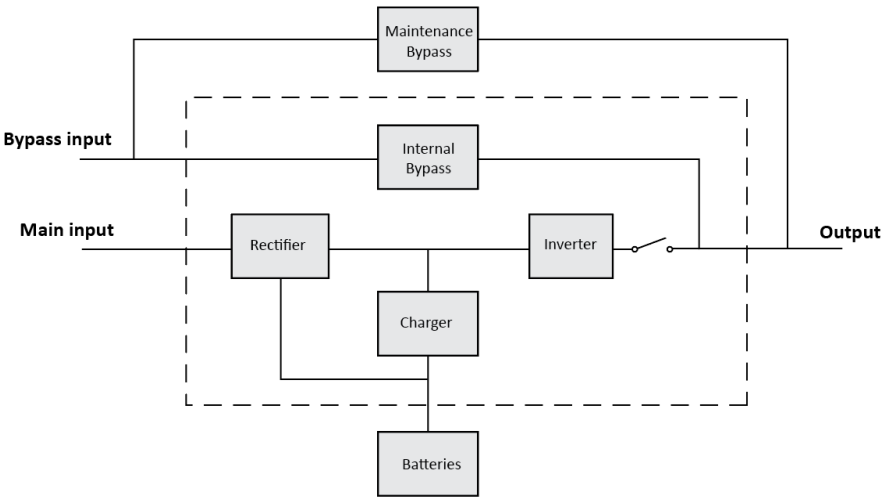
If alarm exists, shows here. 4 messages for high priority alarm

Problem Displayed	Possible cause	Remedy
Site wring fault	Phase and neutral conductor at input of UPS system are reversed	Reverse mains power wiring
Neutral wire missed	Neutral abnormal	Confirm the connection of the input wires
Pos Bat open	Battery pack is not connected correctly	Do the battery test to confirm; Check the battery bank is properly connected to the UPS; Check the battery breaker is turn on or fuse OK
Neg Bat open	Battery pack is not connected correctly	Do the battery test to confirm; Check the battery bank is properly connected to the UPS; Check the battery breaker is turn on or fuse OK.
Pos Bat Low	Battery voltage is low	When audible alarm sounding every second, battery is almost empty
Neg Bat Low	Battery voltage is low	When audible alarm sounding every second, battery is almost empty.
Pos Over Charge	Battery voltage is high	Consult dealer
Neg Over Charge	Battery voltage is high	Consult dealer
Pos Charger Failure	UPS internal fault	Consult dealer
Neg Charger Failure	UPS internal fault	Consult dealer
Bad Battery Count	Unreasonable battery number	Check whether the actual battery cell number is consistent with the set value
Pos Bus Over Volt	UPS internal fault, the + DC BUS voltage is too high	Consult dealer
Neg Bus Over Volt	UPS internal fault, the -DC BUS voltage is too high	Consult dealer
Pos Bus Under Volt	UPS internal fault, the + DC BUS voltage is too low	Consult dealer
Neg Bus Under Volt	UPS internal fault, the -DC BUS voltage is too low	Consult dealer
Bus Unbalance	UPS internal fault, the voltage difference between DC Bus+ and DC bus- is too large	Consult dealer
Bus Short	UPS internal fault	Consult dealer
Bus Soft Start Fail	UPS internal fault	Consult dealer
Output Short circuit L1 Output Short circuit L2 Output Short circuit L3 Output Short circuit	abnormally low impedance placed on its output and considers it a short circuit	Remove all the loads. Turn off the UPS; Check if UPS output and loads is short circuit; Ensure short circuit is removed before turning on again
Inverter Over Volt	UPS internal fault, the inverter voltage is too high	Consult dealer
Inverter Under Volt	UPS internal fault, the inverter voltage is too low	Consult dealer

Inverter Soft start Fail	UPS internal fault	Consult dealer.
Inverter Overload Fault	Overload	Check the loads and remove some noncritical loads; Check if some loads are failed
Output Overload Fault		
Byp Overload Fault		
Inverter Capacity Open	UPS internal fault	Consult dealer
Primary SPS Fail	UPS internal fault	Consult dealer
Assist SPS Fail		
Emergency Off	Perform emergency shutdown	Check the status of RPO terminal
Internal Over Temp Fault	Inside temperature of UPS is too high	Check the ventilation of UPS and the ambient temperature
Byp SCR Over Temp		
Charger Over Temp Fault		
UPS Ambient Over Temp	The ambient temperature is too high	Check the environment ventilation
Fan Lock	Fan abnormal	Check if the fan is running normally or fan detection cable disconnected
ESS Fan lock		
Model Setting Wrong	Wrong work mode	Consult dealer
Neg Power Fault	Negative power fault	Consult dealer
Para. Cable Lost	The cable is not connected	Please confirm the connection status of the parallel cable
Para. Incompatible	Para setting different	Please check the parallel settings, if it still alarms, please consult dealer.
IoT disconnected	IoT is disabled	Enable IoT function in LCD
	Others	Please refer to Winpower View app help file

9. SPECIFICATIONS

9.1 UPS BLOCK DESIGN



9.2 UPS SPECIFICATIONS

Tower UPS

Model	C750-100-B	C750-100-C	C750-200-B	C750-200-C
Capacity	10kVA/10kW		20kVA / 20kW	
INPUT				
Input Voltage Range	110VAC - 300VAC			
Rated Voltage	220/230/240VAC or 380/400/415 VAC			
Main input rated current (3 phase)	22A		43A	
Main input rated current (1 phase)	65A		129A	
Bypass input rated current (3 phase)	16A		31A	
Bypass input rated current (1 phase)	47A		93A	
Frequency	40Hz/70Hz			
Frequency Range	45Hz-55Hz (50Hz system), 54Hz-66Hz (60Hz system) @ load>60%			
Bypass input frequency	45-55Hz(50Hz system) / 54-66Hz(60Hz system)			
Power Factor	1			
OUTPUT				
Voltage Regulation (AC Mode)	220/230/240VAC 380/400/415VAC			
Maximum Power Factor	1			
Transfer Time Line <-> Battery	0ms			
Transfer Time INV<-> Bypass	0ms			
Wafe form	Pure sine wave			
Short Circuit Current on Normal Mode (3 phase output)	30A for 10±1 cycle		74A for 10±1 cycle	
Short Circuit Current on Normal Mode (1 phase output)	90A for 10±1 cycle		222A for 10±1 cycle	
Overload Capacity	105%-125% Load, 10 minutes transfer to Bypass; 125%-150% Load, 30 seconds transfer to Bypass; >150% Load, 0.5 seconds transfer to Bypass			
BATTERY				
Voltage	192VDC or 240VDC Selectable		384VDC or 480VDC Selectable	
CHARGER				
Charging range	1~13A adjustable			
OTHER MODE				
CVCF	Yes (derating to 60% load)			

PHYSICAL				
Dimension (WxDxH) mm	300 x 633.2 x 805.5mm			
Net weight (Kg)	106	53	160	55
IP Protection Level	IP20			
ENVIRONMENT				
Operating Temperature	0-50^{0}C (derating 50% above 40^{0}C) excluding batteries			
Relative Humidity	0-95% (non-condensing)			
Operating Altitude	0-4000m (the load derating 1 % every up 100m @1000~3000m)			
Storage temperature (with battery)	-15^{0}C - 40^{0}C			
Storage temperature (without battery)	-25^{0}C - 60^{0}C			
Certification				
Safety	IEC/EN 62040-, UKCA, CE			
EMC	IEC/EN 62040-2			
Performance	IEC/EN 62040-3			

Rack UPS

Model	C750R-100-B	C750R-100-C	C750R-200-B	C750R-200-C
Capacity	10kVA/10kW		20kVA / 20kW	
INPUT PERFORMANCE				
Input Voltage Range	110VAC - 300VAC			
Rated Voltage	220/230/240VAC			
Main input rated current (3 phase)	22A		43A	
Main input rated current (1 phase)	65A		129A	
Bypass input rated current (3 phase)	16A		31A	
Bypass input rated current (1 phase)	47A		93A	
Frequency	40Hz/70Hz			
Frequency Range	45Hz-55Hz (50Hz system), 54Hz-66Hz (60Hz system) @ load>60%			
Bypass input frequency	45-55Hz(50Hz system) / 54-66Hz(60Hz system)			
Power Factor (Pf)	1			
OUTPUT				
Voltage Regulation (AC Mode)	220/230/240V AC			
Maximum Power Factor	1			

Transfer Time Line <-> Battery	0ms			
Transfer Time INV<-> Bypass	0ms			
Wafe form	Pure sine wave			
Short Circuit Current on Normal Mode (3 phase output)	30A for 10±1 cycle		74A for 10±1 cycle	
Short Circuit Current on Normal Mode (1 phase output)	90A for 10±1 cycle		222A for 10±1 cycle	
Overload Capacity	105%-125% Load, 10 minutes transfer to Bypass; 125%-150% Load, 30 seconds transfer to Bypass; >150% Load, 0.5 seconds transfer to Bypass			
BATTERY				
Voltage	240VDC		480VDC	
CHARGER				
Charging Current (default)	2A	4A	2A	4A
Charging range	1~13A adjustable			
OTHER MODE				
CVCF	Yes (deterating to 60% load)			
PHYSICAL				
Dimension (WxDxH) mm	438 x 559 x 129(3U)			
Net weight (Kg)	24	24	25	25
IP Protection Level	IP20			
ENVIRONMENT				
Operating Temperature	0-50^{0}C (derating 50% above 40^{0}C) excluding batteries			
Relative Humidity	0-95% (non-condensing)			
Operating Altitude	0-4000m (the load derating 1 % every up 100m @1000~3000m)			
Storage temperature (with battery)	-15^{0}C - 40^{0}C			
Storage temperature (without battery)	-25^{0}C - 60^{0}C			
Certification				
Safety	IEC/EN 62040-, UKCA, CE			
EMC	IEC/EN 62040-2			
Performance	IEC/EN 62040-3			

(1) In CVCF mode or dual source input mode, UPS needs to be de-rated to 60% capacity for 1-1 mode (rated output power and maximum charging current).

(2) @ 220VAC input phase voltage, rated output power and maximum charging.,,