

**VFI ICR(E)(S) IoT 3-3 - PDU
MBP-Maintenance Bypass**

Installation and user manual

Service and support:

Call your local service representative

SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS. This manual contains important instructions that should be followed during installation and maintenance of the MBP.

The MBP models that are covered in this manual are intended for installation in an environment within 0 to 50°C, free of conductive contaminant.

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 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

- 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, always connect the earth wire first.

Safety of product

- The MBP connection instructions and operation described in the manual must be followed in the indicated order.
- The upstream circuit breaker for Normal AC/Bypass AC must be easily accessible. The unit can be disconnected from AC power source by opening this circuit breaker.
- An additional AC contactor is used for backfeed protection and must comply with IEC/EN 62040-1 (the creep age and clearance distances shall meet the basic insulation requirements for pollution degree 2).
- 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 +60°C.

Special precautions

- The unit is 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).
- This MBP is designed to work with UPS.
- All repairs and service should be performed by AUTHORIZED SERVICE PERSONNEL ONLY. There are NO USER SERVICEABLE PARTS inside the MBP.

CONTENTS

1	Introduction	1
1.1	Environmental protection.....	1
2	Product Overview	2
2.1	Model list.....	2
2.2	Presentation	2
3	Installation	5
3.1	Unpacking and inspecting.....	5
3.2	Checking the accessory kit.....	5
3.3	Mechanical installation.....	6
3.4	Power cables connection	8
4	Operation.....	27
4.1	Wiring of detection cable	27
4.2	Normal mode to maintenance bypass mode.....	28
	Appendix 1: System Block Diagram.....	30
	Appendix 2: Product Specification	30

1 Introduction

Thank you for selecting MBP(Maintenance Bypass modular) to protect your electrical equipment.

The MBP allows service person to service or replace the UPS without interrupting the connected loads.

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

1.1 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 destruction 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).



The crossed-out wheeled bin symbol indicates that waste electrical and electronic equipment 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 land-fills and minimize any potential negative impact on human health and environment.

2 Product Overview

2.1 Model list



1. The weight in this table is reference only, please see the labels on the carton for details.
2. Dimension 'D' is chassis only.

Product	Description	Net Weights (kg)	Dimensions (mm) W x H x D
Single MBP	ICR IoT 3-3 10 - 20K MBP	13.6	438*129(3U)*465
1+1 Parallel MBP	ICR IoT 3-3 10 - 20K PARA MBP	19.9	438*129(3U)*465

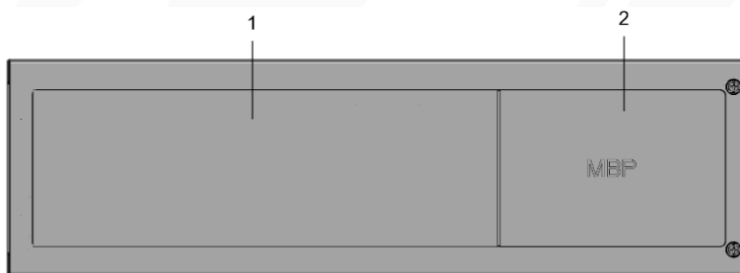
Total 6 input/output modes are included for MBP, default is mode 3-3(single source):

3-3(single source)/ 3-3(dual source)

3-1(single source)/ 3-1(dual source)

1-1(single source)/ 1-1(dual source)

2.2 Presentation

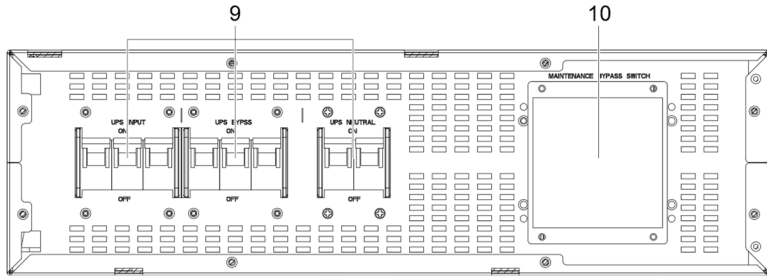


Front view (With front panel)

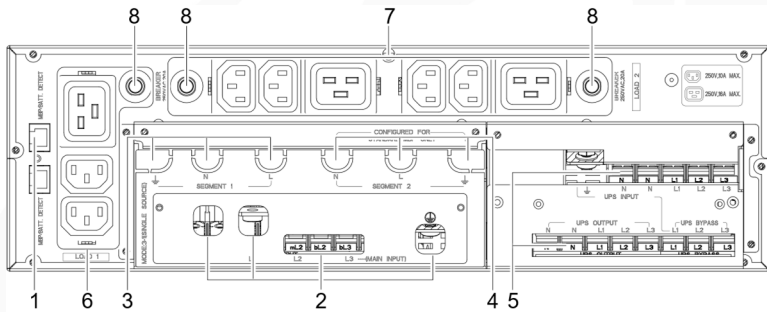
Note:

1. Ventilation area
2. Maintenance Bypass label

● Single MBP:



Front view (Remove front panel)

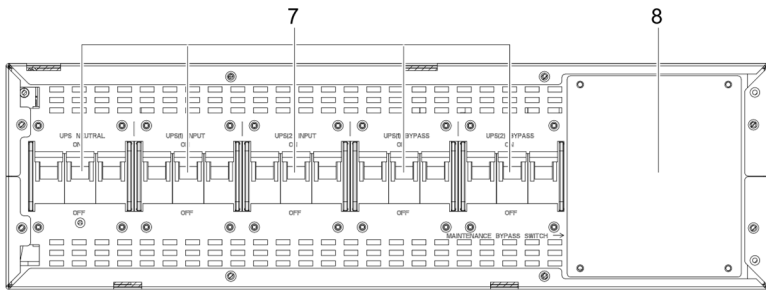


Rear view

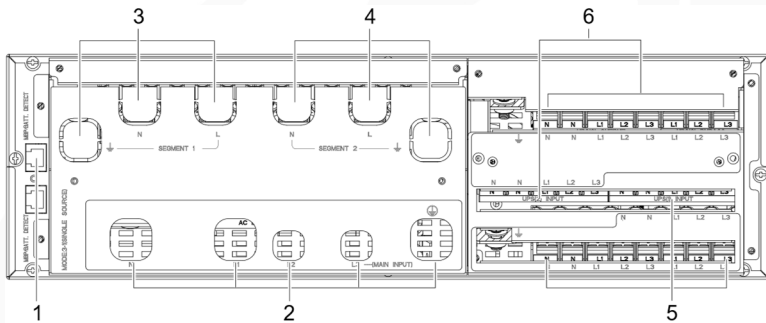
Note:

1. RJ45 ports(Detect EBM / MBP)
2. AC input terminal ports
3. AC output segment 1(Not programmable)
4. AC output segment 2(Programmable)
5. UPS ports
6. Load 1 with IEC output sockets (Not programmable)
7. Load 2 with IEC output sockets (Programmable)
8. Breakers for IEC output sockets
9. Input switch
10. Maintenance bypass switch

- 1+1 parallel MBP:



Front view (Remove front panel)



Rear view

Note:

1. RJ45 ports(Detect EBM / MBP)
2. AC input terminal ports
3. AC output segment 1 (Not programmable)
4. AC output segment 2 (Programmable)
5. UPS1 ports
6. UPS2 ports
7. Input switch
8. Maintenance bypass switch

3 Installation

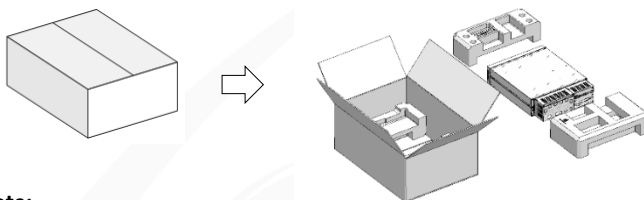
The system may be installed only by qualified electricians in accordance with applicable safety regulations.

3.1 Unpacking and inspecting



Unpacking the unit in a low-temperature environment may cause condensation occurred 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.



Note:

The cabinet is heavy, please see weight provided on the carton/label.

Do not lift the unit's front panel and rear panel.

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



Packing materials must be disposed in compliance with all local regulations concerning waste.

3.2 Checking the accessory kit

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

	Single MBP	1+1 Parallel MBP
MBP detection cable	√	√
Cable to UPS1	√	√
Cable to UPS2		√
Cable locker (for IEC outlets)	√	
Copper bus-bar (including 'mode-setting label')	√	√
Rack ear	√	√
Rack rail kit	O	O
User manual	√	√

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

3.3 Mechanical installation

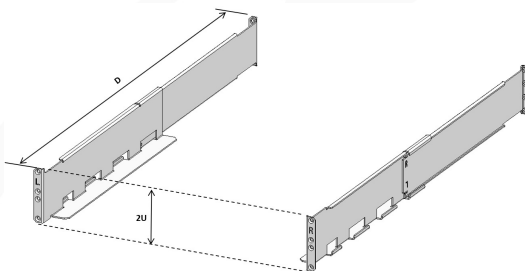
1. This model support 2 installation modes: Rack installation and Tower installation.
2. To keep good ventilation, please keep a free-space (500mm at least) for front / rear panels of the module.
3. Do not carry the front/rear panel of the module during installing.

● Rack installation

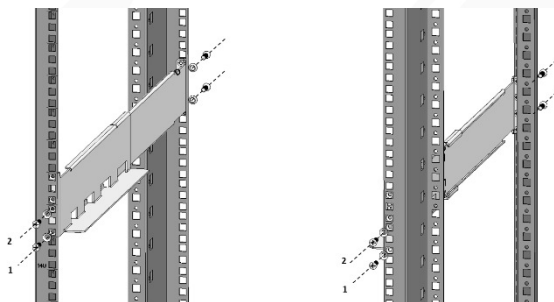
This procedure is suitable for 19 inches rack cabinet installation, it is recommended that the depth of the cabinet be no less than 800mm.

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

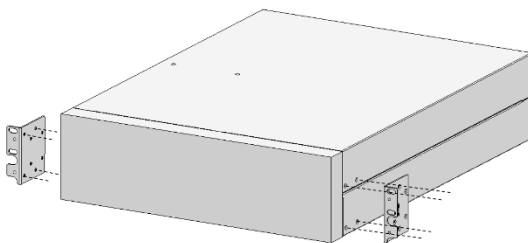
1. Install the rail kit (if configured). This rail kit is '2U & with screw holes (M5)', the depth of the rail kit is: 443-773 mm.



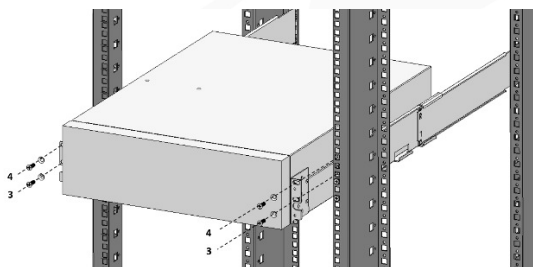
Fasten the rail kit to the cabinet with 8pcs M5 screws + washers (as below):



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

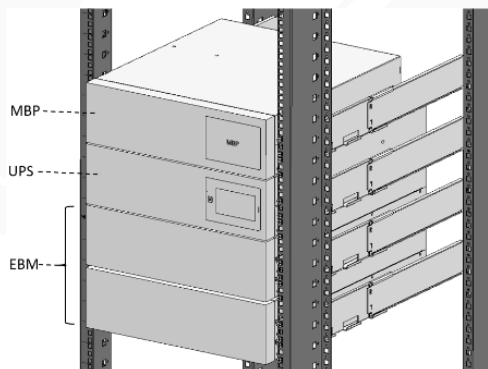


3. Slide the unit into 'rail kit' and make sure tighten the 'rack mounting screw'.



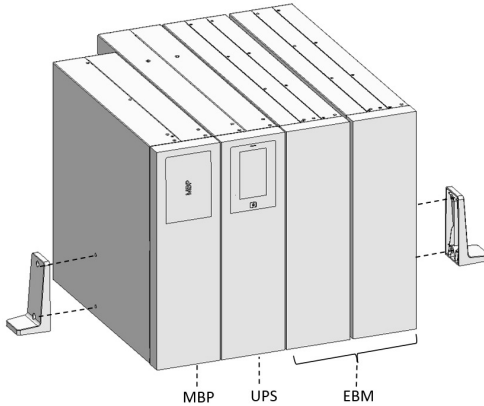
Pay attention to this installation:

MBP modular must be installed on the upper level of the UPS (as shown below).



● Tower installation

1. Place MBP modular to UPS's left side and align with front-panel.
2. Screw the UPS's tower foot: one is to UPS or EBM's side (if EBM configured), another one to MBP's side (as below).

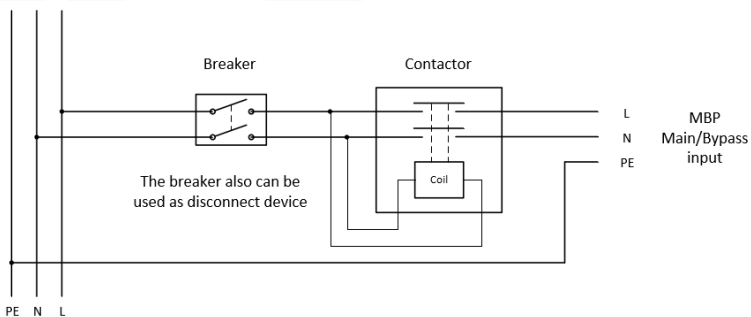


3.4 Power cables connection

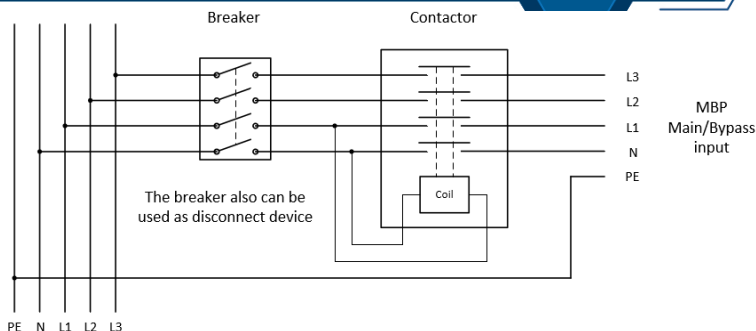
This chapter introduces how to connect MBP to UPS, and connect AC IN/OUT cable to MBP.

3.4.1 Input/Output wiring specifications

When installing and connecting the MBP, configure the circuit breaker and the feed protection contactor before connecting the MBP to prevent current feedback. A “voltage feedback risk” warning label must be added to the feeder protection contactor or similar feeder. Disconnect the MBP before operation and check to ensure that there are no dangerous voltages on all terminals. The rated current requirement of the feeder protection contactor is greater than the rated current of the MBP. Wiring diagram as shown below:



Single phase input system



Three phase input system

Recommended circuit breaker and contactor current specifications:

UPS	MBP model	Input mode	Breaker	Contactor
10kVA	SINGLE MBP	1 phase main input	80A	≥80A
		3 phase main input	32A	≥32A
		1 phase bypass input	63A	≥63A
		3 phase bypass input	32A	≥32A
		1 phase output	63A	/
		3 phase output	32A	/
	1+1 PARALLEL MBP	1 phase main input	160A	≥160A
		3 phase main input	63A	≥63A
		1 phase bypass input	125A	≥125A
		3 phase bypass input	63A	≥63A
		1 phase output	125A	/
		3 phase output	63A	/
15kVA	SINGLE MBP	1 phase main input	125A	≥125A
		3 phase main input	50A	≥50A
		1 phase bypass input	100A	≥100A
		3 phase bypass input	50A	≥50A
		1 phase output	100A	/
		3 phase output	50A	/
	1+1 PARALLEL MBP	1 phase main input	230A	≥230A
		3 phase main input	80A	≥80A
		1 phase bypass input	160A	≥160A
		3 phase bypass input	63A	≥63A
		1 phase output	160A	/
		3 phase output	63A	/

UPS	MBP model	Input mode	Breaker	Contactor
20kVA	SINGLE MBP	1 phase main input	160A	≥160A
		3 phase main input	63A	≥63A
		1 phase bypass input	125A	≥125A
		3 phase bypass input	63A	≥63A
		1 phase output	125A	/
		3 phase output	63A	/
	1+1 PARALLEL MBP	1 phase main input	300A	≥300A
		3 phase main input	100A	≥100A
		1 phase bypass input	230A	≥230A
		3 phase bypass input	80A	≥80A
		1 phase output	230A	/
		3 phase output	80A	/

Please select the AC cable's conductor for MBP according to your UPS module as below.

For 10kVA UPS: following table for the MBP wiring (cross-section of conductor, unit: mm²)

MBP Model	Input/ Output Mode	Input					Output		
		Main input		Bypass input		Ground wire			
		L wire	N wire	L wire	N wire		L wire	N wire	Ground wire
SINGLE MBP	3-3	4	4	4	4	10	4	4	4
	3-1	4	4	10	10	10	10	10	10
	1-1	16	16	10	10	16	10	10	10
1+1 PARALLEL MBP	3-3	10	10	6	6	10	6	6	6
	3-1	10	10	25	25	25	25	25	25
	1-1	50	50	25	25	50	25	25	25

For 15kVA UPS: following table for the MBP wiring (cross-section of conductor, unit: mm²)

MBP Model	Input/ Output Mode	Input					Output		
		Main input		Bypass input		Ground wire			
		L wire	N wire	L wire	N wire		L wire	N wire	Ground wire
SINGLE MBP	3-3	6	6	6	6	10	6	6	6
	3-1	6	6	16	16	16	16	16	16
	1-1	35	35	16	16	35	16	16	16

1+1 PARALLEL MBP	3-3	16	16	10	10	16	10	10	10
	3-1	16	16	50	50	50	50	50	50
	1-1	95	95	50	50	95	50	50	50

For 20kVA UPS: following table for the MBP wiring (cross-section of conductor, unit: mm²)

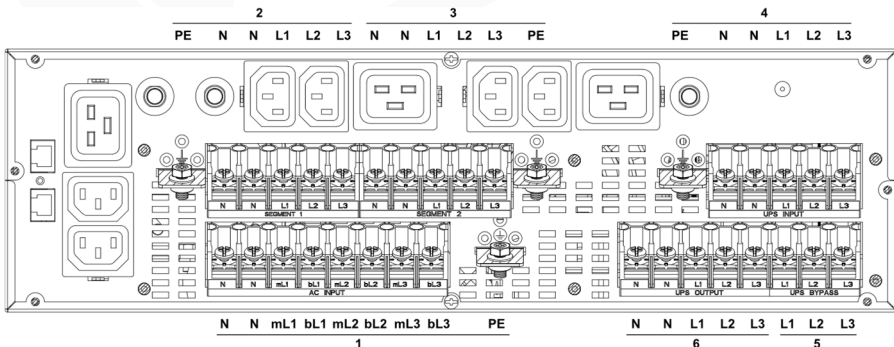
20kVA UPS									
MBP Model	Input/ Output Mode	Input					Output		
		Main input		Bypass input		Ground wire	L wire	N wire	Ground wire
		L wire	N wire	L wire	N wire				
SINGLE MBP	3-3	10	10	10	10	10	10	10	10
	3-1	10	10	25	25	25	25	25	25
	1-1	50	50	25	25	50	25	25	25
1+1 PARALLEL MBP	3-3	25	25	16	16	25	16	16	16
	3-1	25	25	70	70	70	70	70	70
	1-1	120	120	70	70	120	70	70	70

Note:

1. Please select the larger cross-section conductor for the MBP's 'AC input cable' in the single source application.
2. MBP output cable length is recommended not to exceed 10m.

3.4.2 Wiring of single MBP



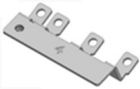




Single MBP terminal block (TB) layout as below:



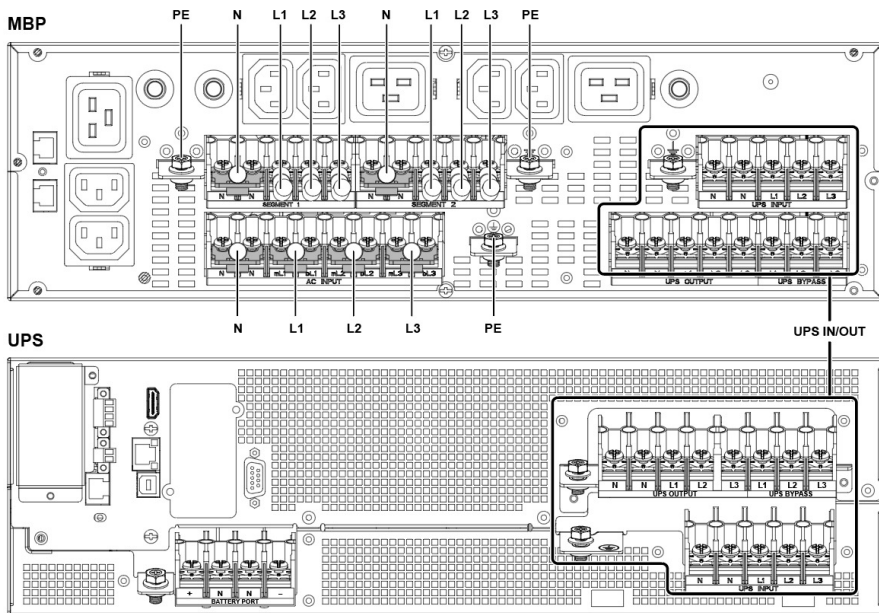
Note:

1. AC input TB: N/N/mL1/ bL1/ mL2/bL2/ mL3/bL3/PE ('m' is main input,'b' is bypass input)
2. AC segment 1 (Not programmable): PE/N/N/L1/L2/ L3
3. AC segment 2 (Programmable): N/N/L1/L2/ L3/ PE
4. UPS input TB: PE/N/N/L1/L2/L3
5. UPS bypass TB: L1/L2/L3
6. UPS output TB: N/N/L1/L2/L3

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

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

● Mode 3-3(single source)



1. Input:

- Connect ground cable (PE) to 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).

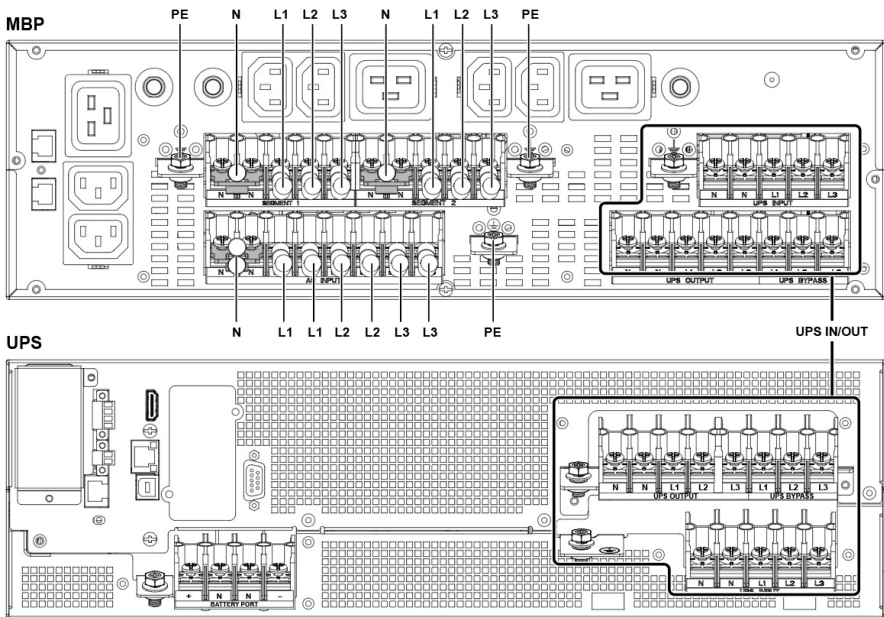
2. Output:

- Connect ground cable (PE) to chassis first;
- Short terminal N/N with buabar #1, connect AC cable(N);
- Connect terminal L1/L2/L3 to AC cable(L1/L2/L3).

3. Connect to UPS:

- Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.

● Mode 3-3(Dual source)



1. 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 terminal mL1/mL2/mL3 to main source cable(L1/L2/L3);

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

2. Output:

Connect ground cable (PE) to chassis first;

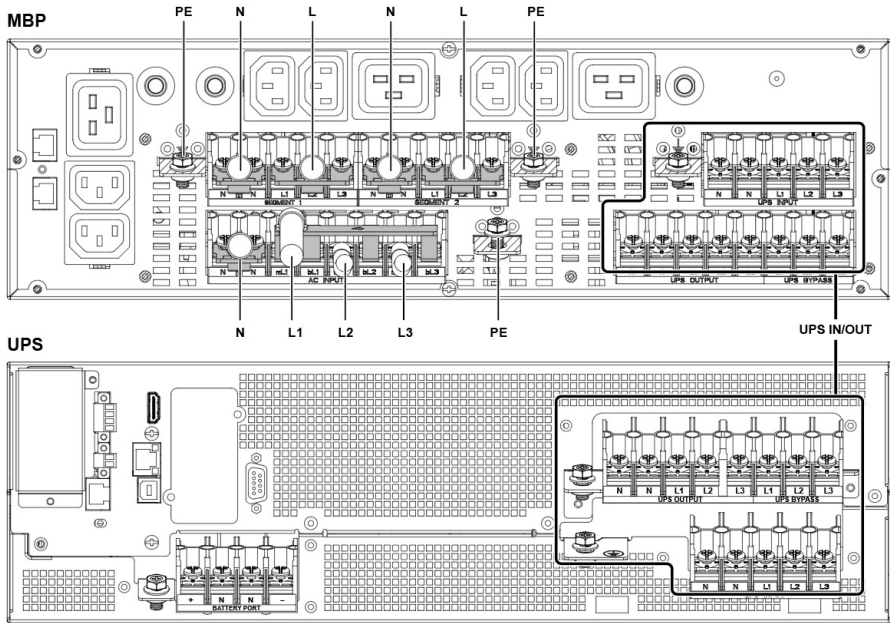
Short terminal N/N with buabar #1, connect AC cable(N);

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

3. Connect to UPS:

Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.

- Mode 3-1(single source)



1. Input:

Connect ground cable (PE) to chassis first;

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

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

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

2. Output:

Connect ground cable (PE) to chassis first;

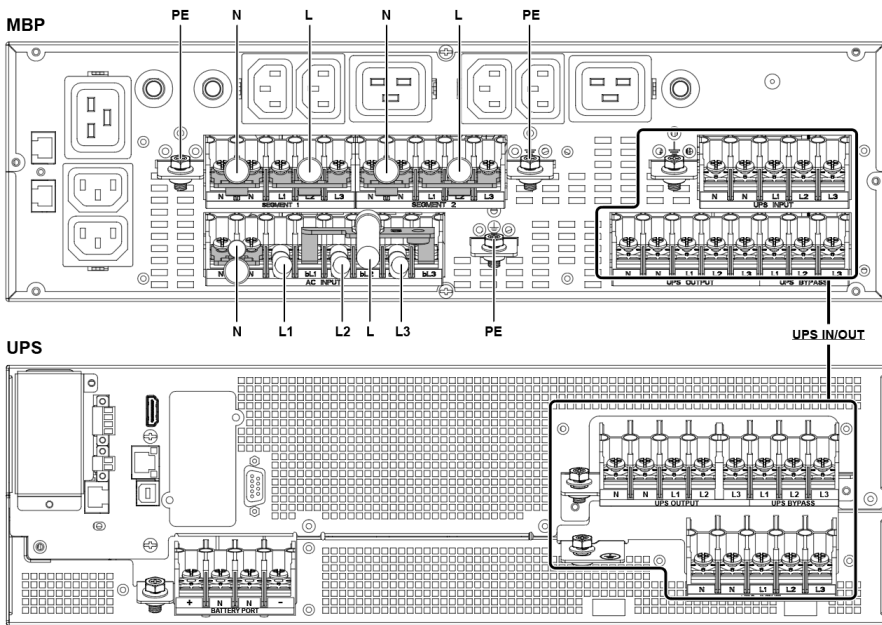
Short terminal N/N with buabar #1, connect AC cable(N);

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

3. Connect to UPS:

Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.

● Mode 3-1(Dual source)



1. 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 terminal mL1/mL2/mL3 to main source cable(L1/L2/L3);

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

2. Output:

Connect ground cable (PE) to chassis first;

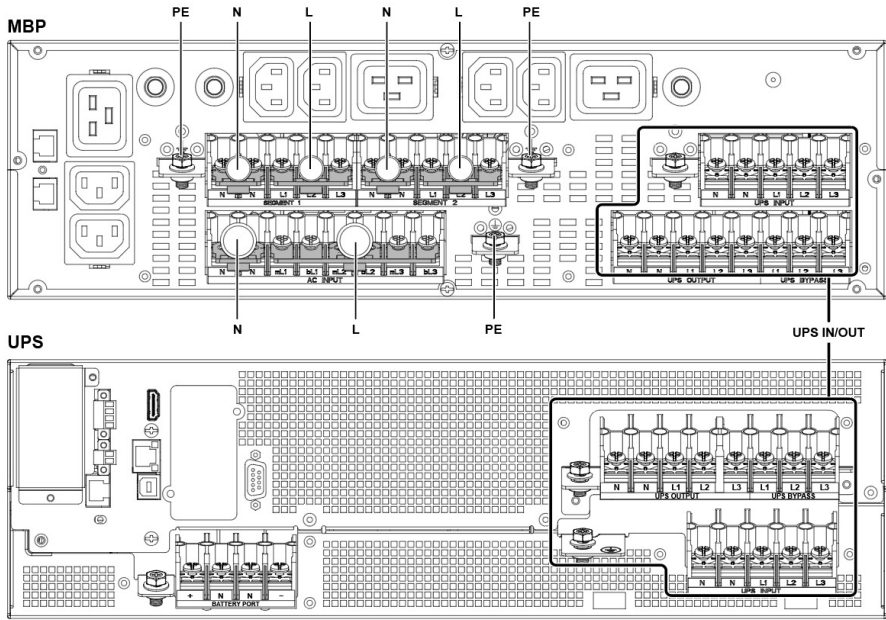
Short terminal N/N with buabar #1, connect AC cable(N);

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

3. Connect to UPS:

Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.

- Mode 1-1(single source)



1. Input:

Connect ground cable (PE) to 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).

2. Output:

Connect ground cable (PE) to chassis first;

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

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

3. Connect to UPS:

Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.

-

Connect ground cable (PE) to chassis first;

Short terminal mL1/mL2/mL3 with busbar #7, connect main source cable(L);

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

Connect ground cable (PE) to chassis first;

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

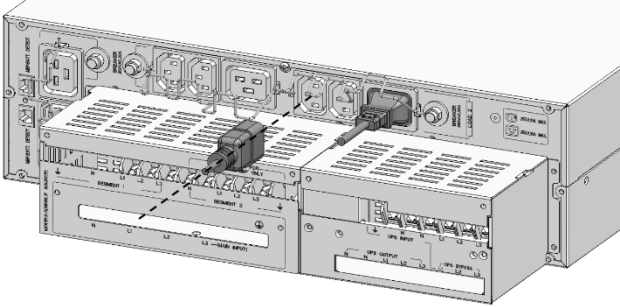
Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

Remove all the busbar of the UPS, then connect the UPS to MBP with 'Cable to UPS1' in MBP accessory.



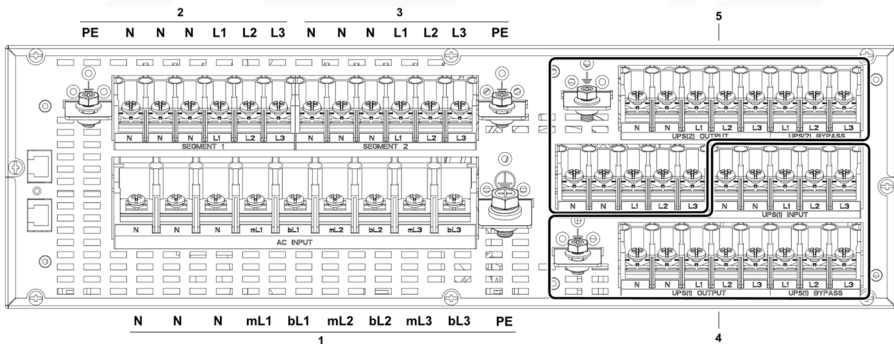
Single MBP also provided the Load 1/ Load 2 with IEC output sockets.

If select these sockets as your loads, it is recommended to install the 'Cable Locker' (as shown below) to prevent your IEC cable suffering an unexpected pulling force and causing the system fault.



3.4.3 Wiring of 1+1 parallel MBP







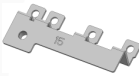
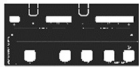
1+1 parallel MBP terminal block (TB) layout as below:



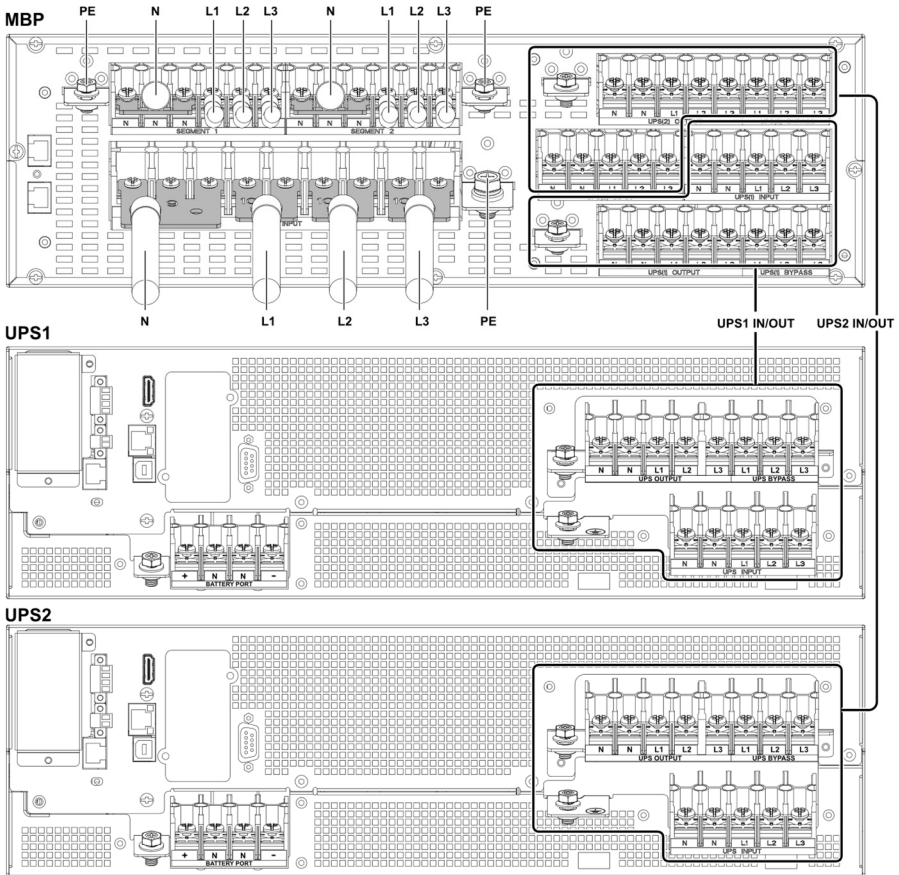
Note:

1. AC input TB: N/N/N/mL1/ bL1/ mL2/bL2/ mL3/bL3/PE ('m' is main input,'b' is bypass input)
2. AC segment 1 (Not programmable): PE/N/N/N/L1/L2/L3
3. AC segment 2 (Programmable): N/N/N/L1/L2/L3/PE
4. To UPS1 ports
5. To UPS2 ports

MBP provide busbars (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	3		2pcs	2pcs	4pcs	4pcs	4pcs	4pcs
	9		1pc	1pc	1pc	1pc	1pc	1pc
	10		3pcs					
	11						1pc	
	12					1pc		1pc
	13							1pc
	15				1pc			
Label for Mode-setting			1pc	1pc	1pc	1pc	1pc	1pc

● Mode 3-3(single source)



1. Input:

- Connect ground cable (PE) to chassis first;
- Short 'terminal N/N/N with busbar #9, connect AC cable(N);
- Short terminal mL1/bL1 with busbar #10, connect AC cable(L1);
- Short terminal mL2/bL2 with busbar #10, connect AC cable(L2);
- Short terminal mL3/bL3 with busbar #10, connect AC cable(L3).

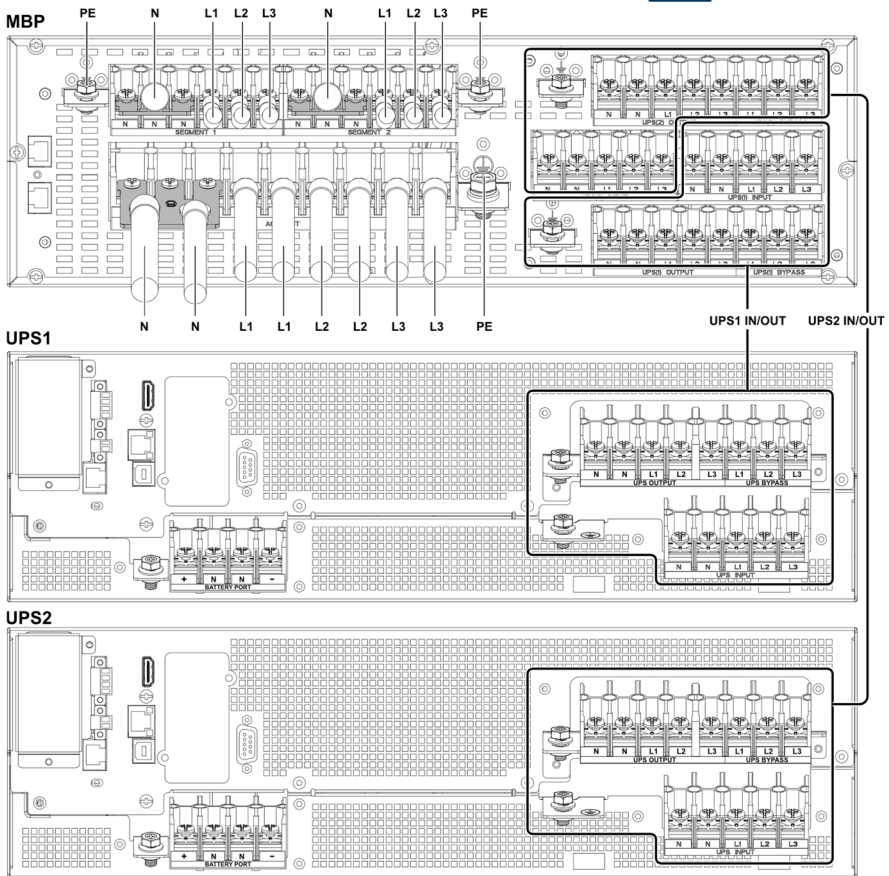
2. Output:

- Connect ground cable (PE) to chassis first;
- Short terminal N/N/N with buabar #3, connect AC cable(N);
- Connect terminal L1/L2/L3 to AC cable(L1/L2/L3).

3. Connect to UPS1 and UPS2:

- Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

● Mode 3-3(Dual source)



1. Input:

Connect ground cable (PE) to chassis first;

Short terminal N/N/N with busbar #9, connect AC main source cable(N) and bypass source cable(N);

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

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

2. Output:

Connect ground cable (PE) to chassis first;

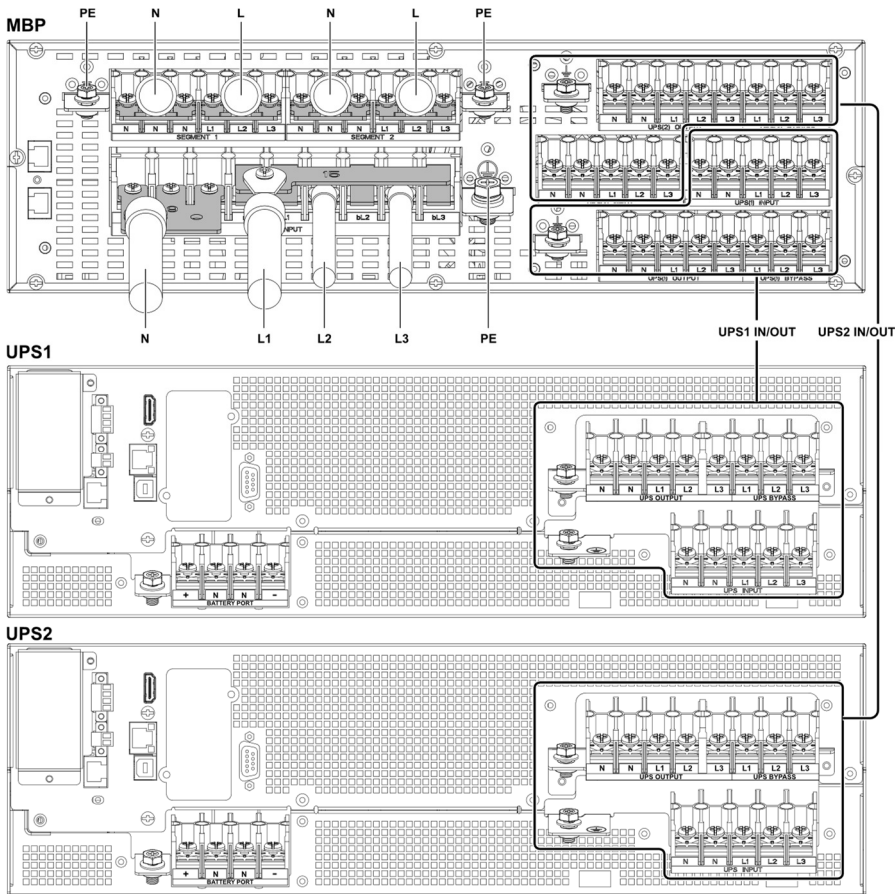
Short terminal N/N/N with buabar #3, connect AC cable(N);

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

3. Connect to UPS1 and UPS2:

Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

● Mode 3-1(single source)



1. Input:

- Connect ground cable (PE) to chassis first;
- Short terminal N/N/N with busbar #9, connect AC cable(N);
- Short terminal mL1/bL1/bL2/bL3 with busbar #15, connect AC cable(L1);
- Connect terminal mL2/mL3 to AC cable(L2/L3).

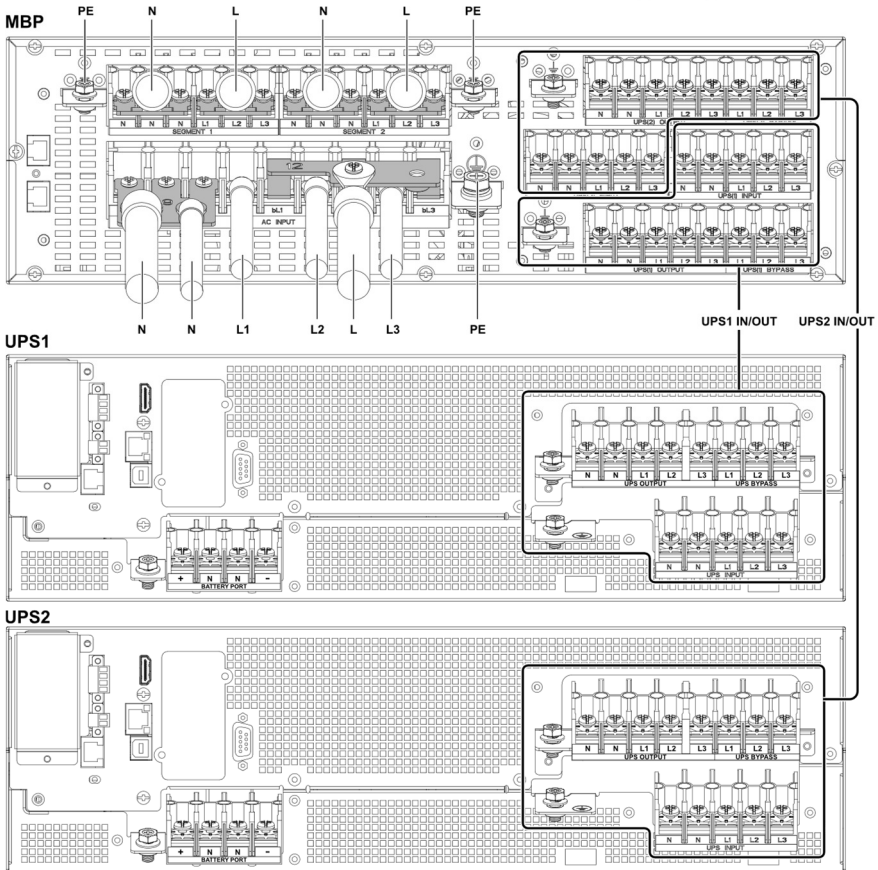
2. Output:

- Connect ground cable (PE) to chassis first;
- Short terminal N/N/N with buabar #3, connect AC cable(N);
- Short terminal L1/L2/L3 with busbar #3, connect AC cable(L).

3. Connect to UPS1 and UPS2:

- Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

● Mode 3-1(Dual source)



1. Input:

Connect ground cable (PE) to chassis first;

Short terminal N/N/N with busbar #9, connect AC main source cable(N) and bypass source cable(N);

Connect terminal m1/m2/m3 to main source cable(L1/L2/L3);

Short terminal b1/b2/b3 with busbar #12, connect bypass source cable(L).

2. Output:

Connect ground cable (PE) to chassis first;

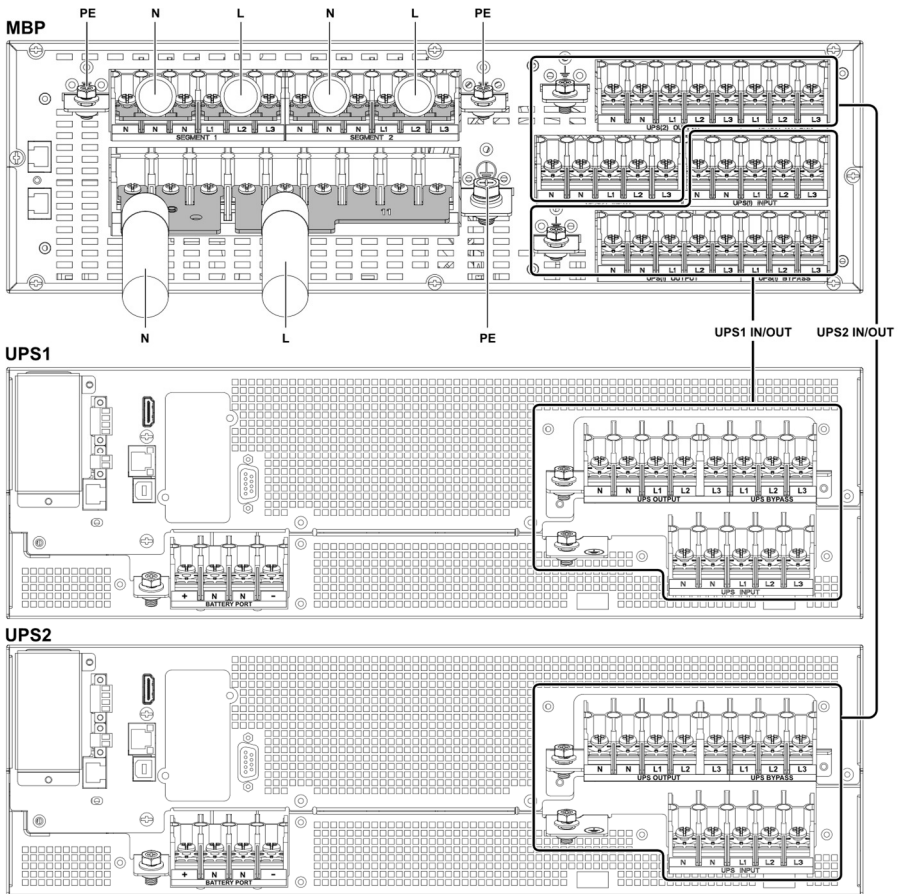
Short terminal N/N/N with buabar #3, connect AC cable(N);

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

3. Connect to UPS1 and UPS2:

Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

● Mode 1-1(single source)



1. Input:

Connect ground cable (PE) to chassis first;

Short terminal N/N/N with busbar #9, connect AC cable(N);

Short terminal mL1/bL1/mL2/bL2/mL3/bL3 with busbar #11, connect AC cable(L).

2. Output:

Connect ground cable (PE) to chassis first;

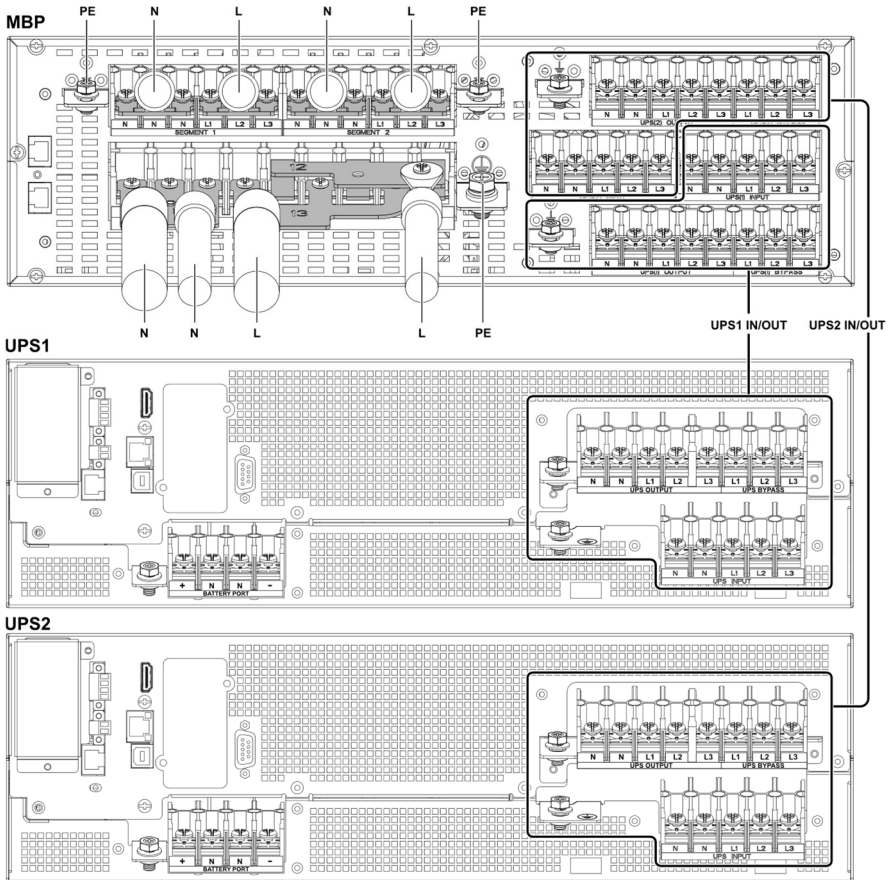
Short terminal N/N/N with buabar #3, connect AC cable(N);

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

3. Connect to UPS1 and UPS2:

Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

● Mode 1-1(Dual source)



1. Input:

Connect ground cable (PE) to chassis first;

Short terminal N/N/N with busbar #9, connect AC main source cable(N) and bypass source cable(N);

Short terminal mL1/mL2/mL3 with busbar #13, connect main source cable(L);

Short terminal bL1/bL2/bL3 with busbar #12, connect bypass source cable(L).

2. Output:

Connect ground cable (PE) to chassis first;

Short terminal N/N/N with busbar #3, connect AC cable(N);

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

3. Connect to UPS1 and UPS2:

Remove all the busbar of the UPS, then connect UPS1 and UPS2 to MBP with 'Cable to UPS1' and 'Cable to UPS2' in MBP accessory.

4 Operation

Take the '1+1 parallel UPS system' as an example to introduce the settings of MBP operation.

4.1 Wiring of detection cable

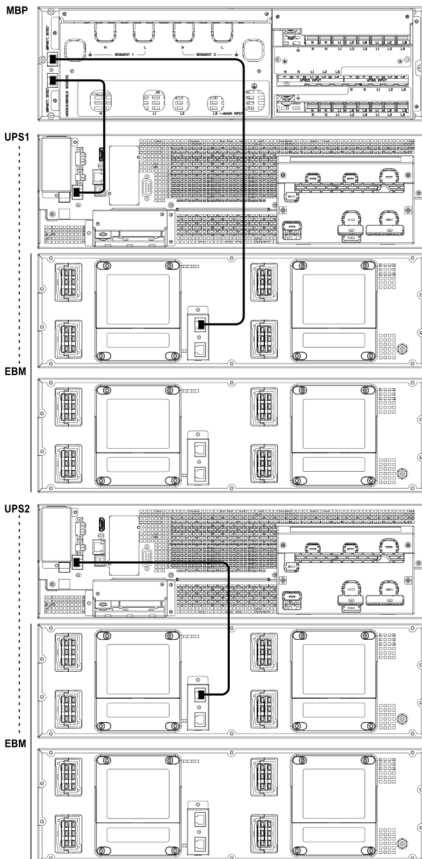


Assume that you already completed the power-wiring for the whole system:

Power-wiring for EBM connect to UPS, please refer to 'UPS user manual' or 'EBM quick start'; 'Parallel cable' signal wiring between UPS1 and UPS2, please refer to 'UPS user manual'.

Please set up the system's detect-loop as below:

1. MBP detect: connect MBP to UPS1 via 'MBP Detection cable' (MBP attached).
2. UPS1 detect EBM: connect EBM to MBP via 'EBM Detection cable' (EBM attached).
3. UPS2 detect EBM: connect EBM to UPS2 via 'EBM Detection cable' (EBM attached).



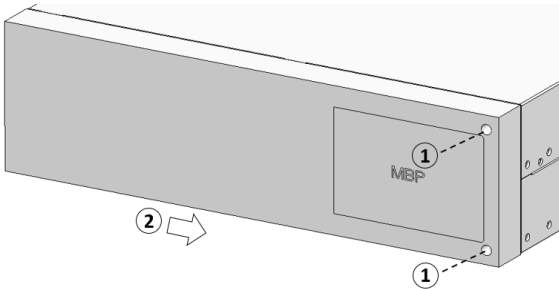
4.2 Normal mode to maintenance bypass mode



Please make sure the UPS is turned to bypass mode before rotating the maintenance switch to 'MAINTENANCE' position.

1. Remove plastic-panel:

Loosen the plastic panel screws of the MBP and remove the plastic panel as below.

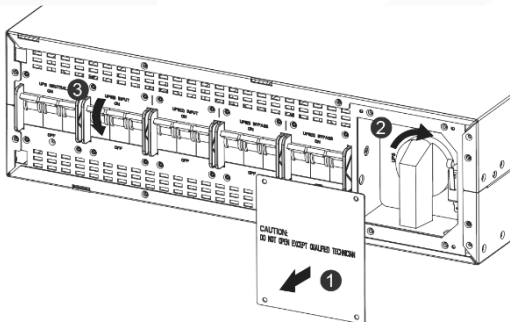


2. Rotate the 'Maintenance Bypass Switch':

Remove protective cover of 'Maintenance Bypass Switch' first, the UPS will turn to bypass mode automatically. Then rotate the handle of 'Maintenance Bypass Switch' to the position of 'MAINTENANCE'.

3. Turn down the 'Input switch':

Turn down all the 'Input switch' on the front panel of the MBP to 'OFF', operation sequence is recommended with: UPS input switch → UPS bypass switch → UPS Neutral switch.



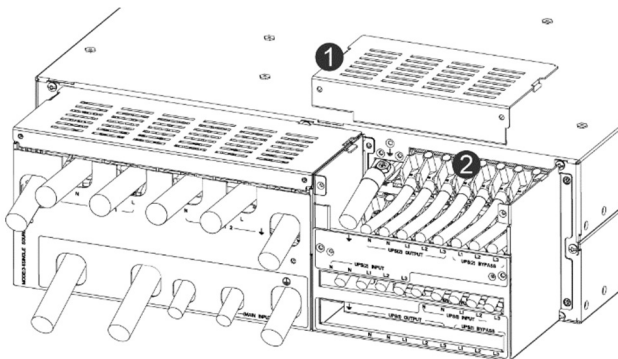
4. Remove the UPS:

Disconnect all EBM's from the UPS and ensure that the UPS has been completely shut down.

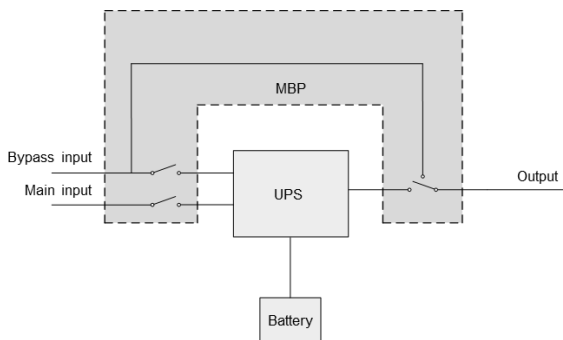
Remove all the wiring between MBP and UPS, then remove the UPS for maintenance/replacement.



When removing the 'Cable to UPS', remove top cover of 'UPS ports' only on the MBP, keep the box of AC input/ AC segment to avoid artificial electric shock.



Appendix 1: System Block Diagram



Appendix 2: Product Specification

Model name		SINGLE MBP	1+1 PARALLEL MBP
Input	Voltage range (Phase voltage)	220/230/240VAC	
	Frequency	50/60Hz	
	Rated current (Single phase input)	129A MAX	258A MAX
	Rated current (Three phase input)	43A MAX	86A MAX
Bypass	Rated voltage (Phase voltage)	220/230/240VAC	
	Frequency	50/60Hz	
	Rated current (Single phase input)	93A MAX	186A MAX
	Rated current (Three phase input)	31A MAX	62A MAX
Output	Voltage range	220/230/240VAC	
	Frequency	50/60Hz	
	Rated power	20kVA/20kW	40kVA/40kW
	Socket rated current	16A ⁽¹⁾ /10A	/
	Overload	Refer to UPS overload	
Environment: Refer to UPS			

(1) If ambient temperature is over 35°C, 16A socket needs to be derated to 10A.