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# Delta UPS - Amplon Family

RT Series, Three Phase  
10/ 15/ 20 kVA  
Maintenance Bypass Box  
for Single UPS

User Manual

## Save This Manual

This manual contains important instructions and warnings that you should follow during the installation, operation, storage and maintenance of this product. Failure to heed these instructions and warnings will void the warranty.

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## Chapter 1 : Product Introduction

The Delta Maintenance Bypass Box (MBB) is applicable to Delta Amplon UPSs: RT-15K3P and RT-20K3P. The MBB provides AC input power to the UPS and connects the output of the UPS to the critical loads and is configurable for single-phase or three-phase output to suit your needs. When your UPS needs maintenance, you can switch on the MBB's manual bypass switch to let the power be transferred from the inverter output to the manual bypass output to ensure continuous power supply to your critical loads when the UPS is under maintenance.

## Chapter 2 : Important Safety Instructions

### 2.1. Safety Instructions

#### Installation Warnings

- Before installation and usage, please read this **User Manual** thoroughly. This will help you to use the product correctly and safely.
- Install the MBB in a well-ventilated area, away from excess moisture, heat, dust, flammable gas or explosives.
- To avoid fire accidents and electric shock, please install the MBB in an indoor area free of conductive contaminants and the temperature and humidity must be well-controlled. For the temperature and humidity specifications, please refer to **Appendix 1 : Technical Specifications**.
- Leave adequate space (at least 50 cm) around all sides of the MBB for proper ventilation.

#### Connection Warnings

- The MBB must be well grounded due to a possible risk of current leakage.
- The installation of upstream and downstream protective devices is highly recommended when the MBB is connected to the UPS.
- The protective devices connected to the MBB must be installed near the MBB and must be easily accessible for operation.
- If you need to move the MBB or perform re-wiring, please turn off the AC input power. Otherwise, the output end might still be energized, which might cause electric shock.

#### Usage Warnings

- To ensure reliable operation of the MBB and to protect the MBB from overheating, the slits and openings in the MBB must not be blocked or covered.
- Before usage, you must allow the MBB to adjust to room temperature for at

least one hour to avoid moisture condensing inside the MBB.

- Do not pour and splash any liquid on the MBB. Do not insert any object into the MBB's slits and openings. Do not put beverage containers on or around the MBB.
- Do not apply any cleaning liquid or cleaning spray to the MBB. Before cleaning, please make sure that the input power cables have been unplugged.
- All maintenance services must be performed by qualified service personnel.
- Forbid opening or removing the cover of the MBB by yourself to avoid high voltage electric shock.
- You must contact qualified service personnel if either of the following events occurs:
  1. Liquid is poured or splashed on the MBB.
  2. The MBB does not run normally after the instructions in this ***User Manual*** are carefully observed.

## 2.2. Standard Compliance

- IEC/EN 62040-1

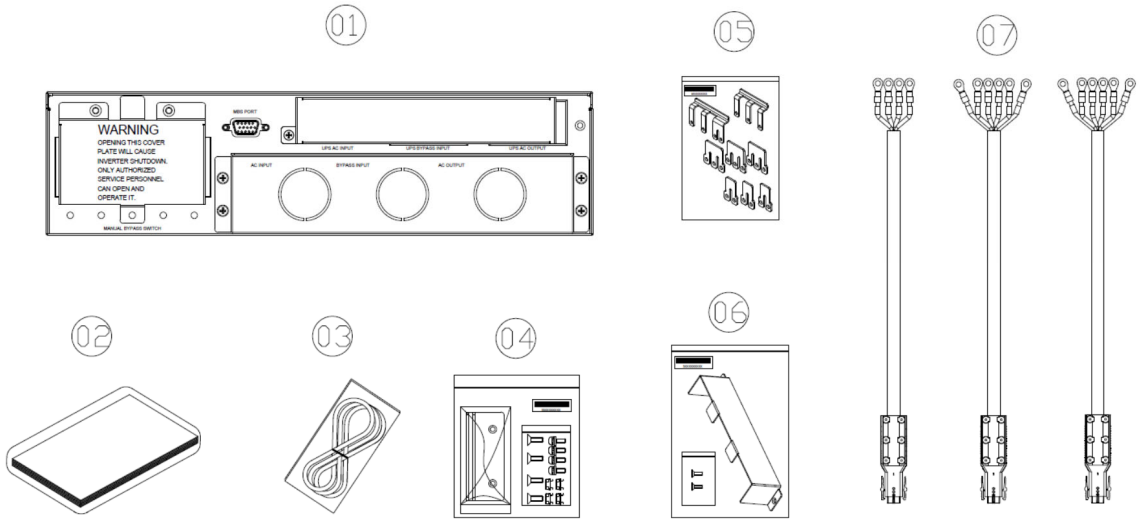
## 2.3. Storage

- Prior to installation  
If the MBB needs to be stored prior to installation, it should be placed in a dry area. The allowable storage temperature and relative humidity (non-condensing) are  $-15^{\circ}\text{C} \sim +55^{\circ}\text{C}$  and  $5 \sim 95\%$  respectively.
- After usage  
Remove all equipment from the MBB, and store the MBB in a dry and well-ventilated area at a temperature between  $-15^{\circ}\text{C}$  and  $+55^{\circ}\text{C}$  and at a relative humidity (non-condensing) between  $5 \sim 95\%$ .

## Chapter 3 : Package List

The package contains the following items shown in **Figure 3-1**. Please check if any item is missing. If there is anything missing, please contact the dealer immediately.

**Model: MBB-RT-15/20K WW2U**



**(Figure 3-1: Package List)**

No.	Item	Quantity
1	MBB	1 PC
2	User Manual	1 PC
3	MBB Communication Cable	1 PC
4	Ear Bracket Kit	1 SET
5	BUS Bar	1 SET
6	Cover and Screws*1	1 SET
7	Power cable*2	1 SET



**NOTE :**

1. \*1 The cover and screws should be installed on the MBB to protect the power cables as shown in **Figure 6-12**.
2. \*2 There are 3 power cables: main input power cable (4 pins), bypass input power cable (6 pins) and output power cable (6 pins). These three power cables are for connection with the UPS model shipped without the cables already being installed on the UPS; the connection should be performed by qualified service personnel.
3. If there is any damage or anything missing, please immediately contact the dealer from whom you purchased the unit.
4. If the MBB needs to be returned, carefully repack the MBB and all of the accessories with the original packing material that came with the unit.

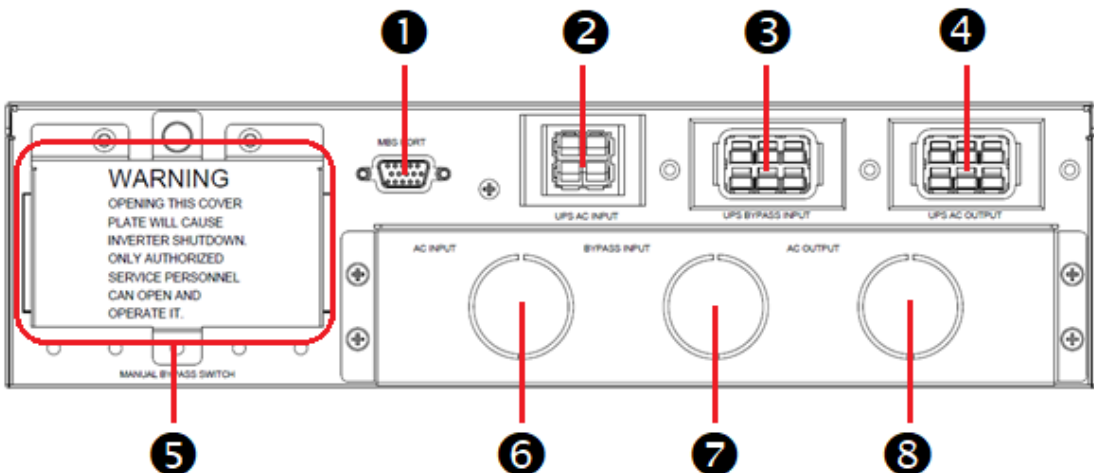


## Chapter 4 : The Rear Panel





### NOTE:

1. There are no operational components or interfaces on the front of the MBB.
2. The UPS AC input, the UPS bypass input and the UPS AC output marked with ② ③ ④ in **Figure 4-1** are originally covered, after removing the cover, you can see them and conduct the connection. For the details of connection, please refer to **Chapter 6: Connection**. Please note that the cover should be reinstalled as the original state after you remove the connection between the MBB and the UPS.
3. The AC input, the bypass input and the AC output marked with ⑥ ⑦ ⑧ in **Figure 4-1** are covered with a knockout cover respectively. When conducting the connection, you have to remove the knockout covers shown in **Figure 6-1**. For the details of connection, please refer to **Chapter 6: Connection**. Please note that the knockout covers do not need to be reinstalled.



(Figure 4-1: The Rear Panel of the MBB)

No.	Item	Function
1	MBS Port	Connect to the parallel port of UPS to send messages.
2	UPS AC Input Port	Connect to the UPS's AC input power cable.
3	UPS Bypass Input Port	Connect with the UPS's bypass power cable.
4	UPS AC Output Port	Connect with the UPS's output socket.
5	Manual Bypass Switch (covered)	<p>No connection is needed. The function is to switch the UPS into manual bypass mode for maintenance without power supply interruption.</p> <p> <b>NOTE:</b></p> <p>There is a warning cover on the manual bypass switch. After you unscrew the 3 screws shown in <b>Figure 8-1</b> and remove the warning cover, you can see the switch and the MBB's detector will be automatically activated and send a message to the UPS to make it transfer to bypass mode.</p> <p> <b>WARNING:</b></p> <p>Opening the warning cover will cause inverter shutdown. Only authorized service personnel can open and operate it.</p>

6	AC Input Terminals	Include mL1 (VIN_R) / mL2 (VIN_S) / mL3 (VIN_T) / N (IP_N) *1 terminals which connect to the main AC source.
7	Bypass Input Terminals	Include bL1 (BYP_R) / bL2 (BYP_S) / bL3 (BYP_T) / N (IP_N) *1 terminals which connect to the bypass source.
8	AC Output Terminals	Include L1 (VOUT_R) / L2 (VOUT_S) / L3 (VOUT_T) / N (OP_N) which connect to the critical loads.



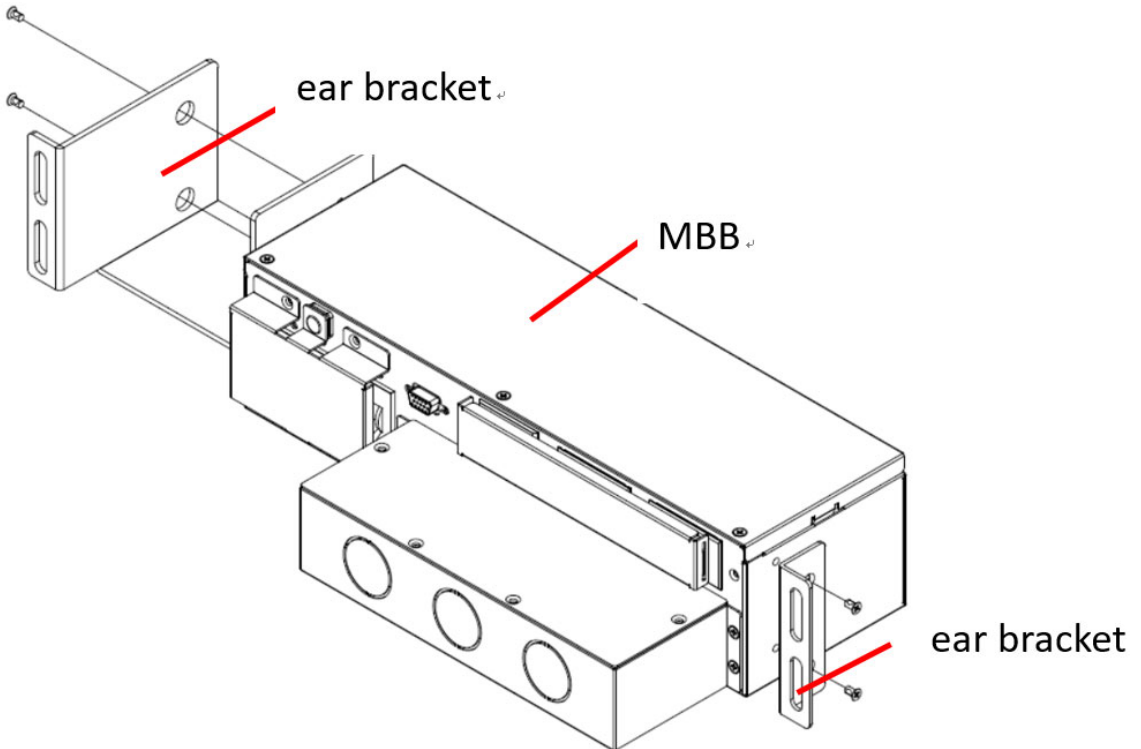
**NOTE:**

\*1 For dual-source input configurations, the main AC source and the bypass source must use the same neutral (N). For the details of connection, please refer to **Chapter 6: Connection**.

## Chapter 5 : Installation Procedures

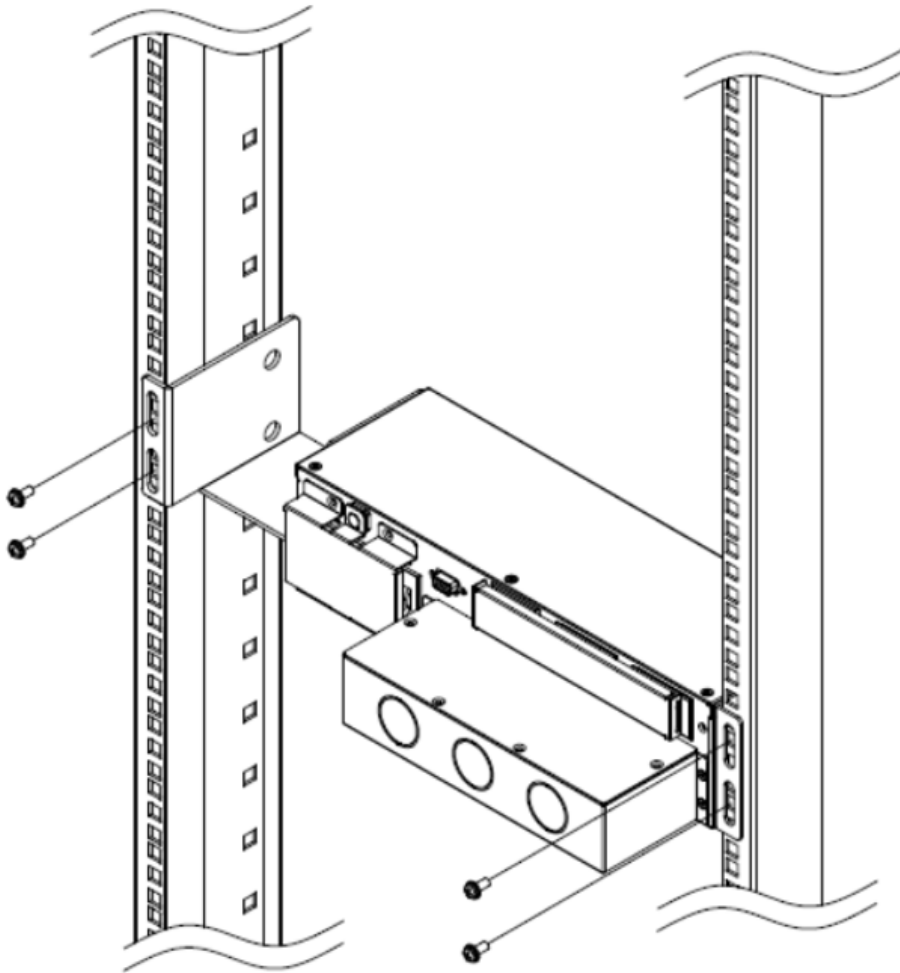
Please follow the steps below to conduct rack mounting:

Step ① : Attach the included ear brackets to the MBB and verify all screws have been properly fastened. Please see **Figure 4-1**.



**(Figure 5-1: Attach the Included Ear Brackets to the MBB)**

Step ② : Install the MBB on standard 19-inch server rack and tighten the screws provided in the kit. See **Figure 5-2**.



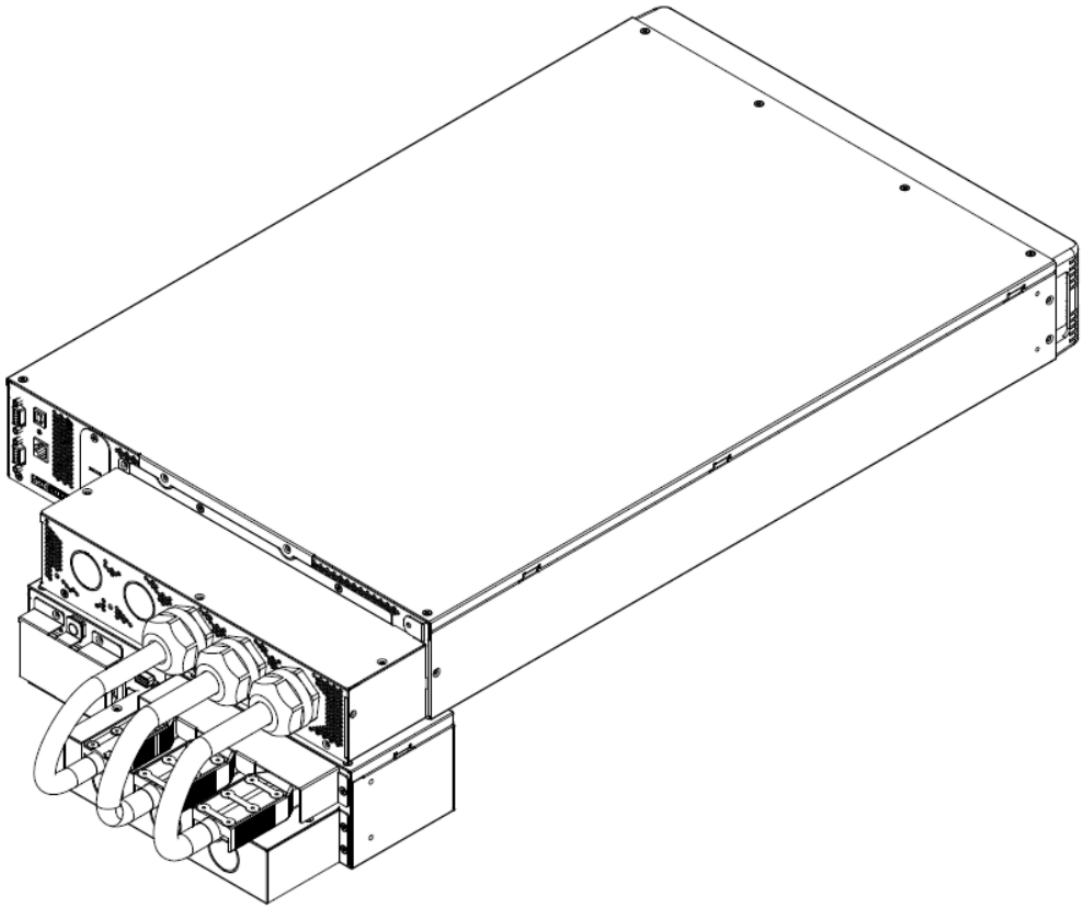
**(Figure 5-2: Install the MBB to Standard 19-inch Server Rack)**



**NOTE :**

1. If the MBB is installed behind the Delta lithium-ion battery pack (optional), please keep MBB away from the Delta lithium-ion battery pack at least 1cm.
2. When MBB is connected to UPS, the MBB should be installed on the

UPS or under the UPS depend on installation environment. For example, the MBB is installed under the UPS, see **Figure 5-3**.



**(Figure 5-3: Install the MBB under UPS)**

## Chapter 6 : Connection

To connect the UPS with the AC source, bypass source and critical loads via the MBB, the user should connect the UPS with the MBB first; then, connect the MBB with the AC source, bypass source and critical loads.



### NOTE :

1. User can decide whether to adopt single power source or dual power source and single phase or three phase, which would influence the ways of wiring configuration. For more details, please refer to **Chapter 6.3.1 ~ Chapter 6.3.4**.
2. Regarding the connection between the UPS and the battery pack, please refer to Delta Amplon RT Series 15/ 20kVA UPS **User Manual** and the Delta battery pack **User Manual**.

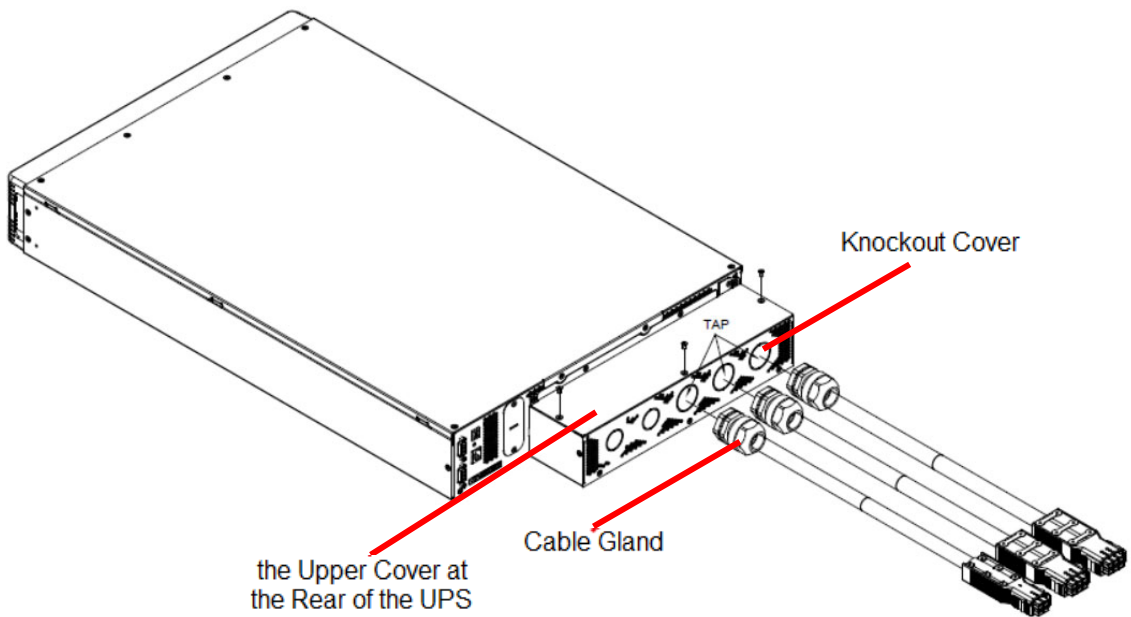
### 6.1. Pre-connection Warnings

The circuit breaker or other protective device must be installed at the AC power input. Please follow Delta Amplon RT Series 15/ 20kVA UPS **User Manual** to install the input protective device.

### 6.2. UPS Model Without Power Cables

MBB should be connected to the UPS with the power cables. If the UPS model user originally purchased does not have the power cables installed before shipment, the user should use the three power cables provided in the MBB's package to complete the connection with the UPS. The power cables to be connected include the main input, bypass input and output cables. Please follow the steps below to perform the power cable connection with the UPS; the connection should be performed by qualified service personnel.

1. There are an upper cover at the rear of the UPS and three knockout covers on UPS's rear panel, remove them as shown in **Figure 6-1**. After removing them, you can see the UPS wiring terminals from the top.

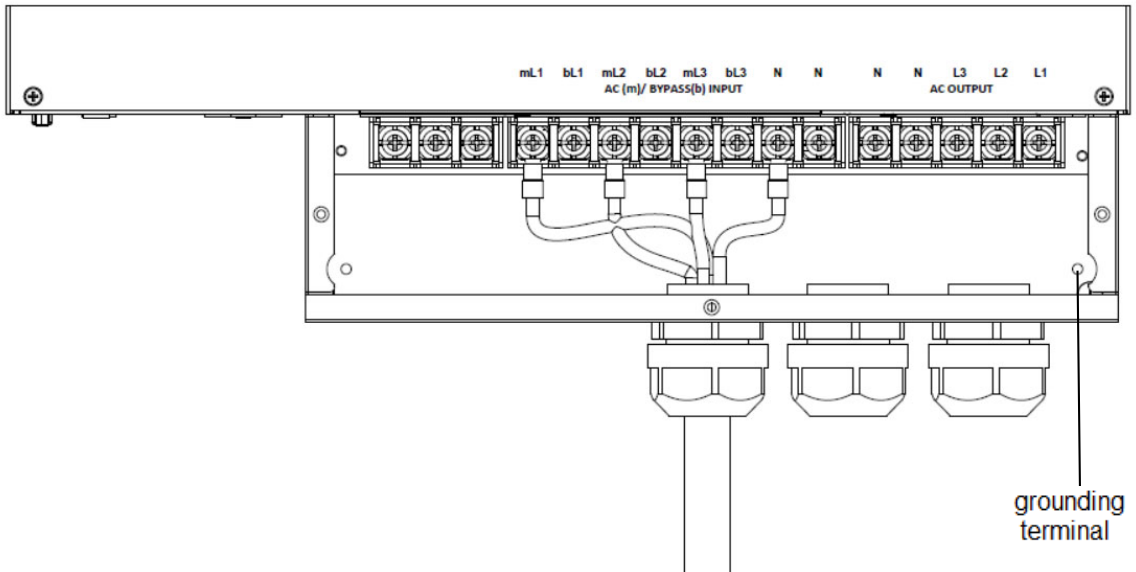


**(Figure 6-1: Remove the Upper Cover at the Rear of the UPS and the Three Knockout Covers from the UPS's Rear Panel)**

2. Please follow step ❶ to step ❸ below to connect the three power cables to the UPS wiring terminals (the AC input terminals, the bypass input terminals, the UPS output terminals and the grounding terminal). Use three cable glands (user-supplied) to firmly fix the cables on the UPS.

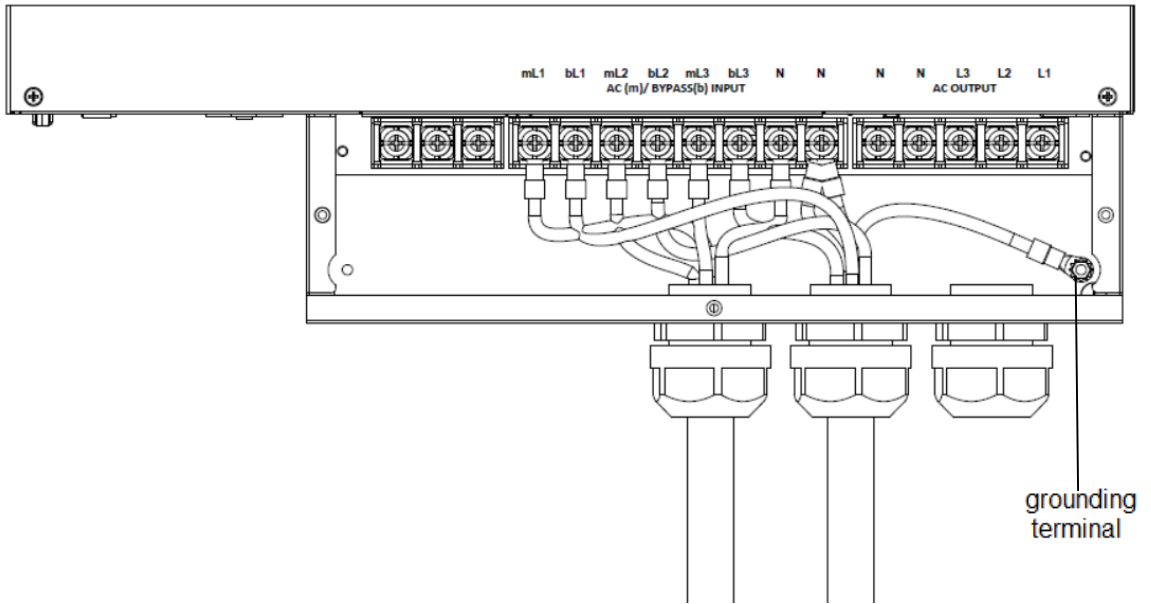
Step ❶ : Fix the AC input power cable (4 pins) on AC input terminals of UPS. Please note that the 4 pins of the main input power cable should be connected to the right position of terminals (mL1, mL2, mL3 and N) as shown in **Figure 6-2**.





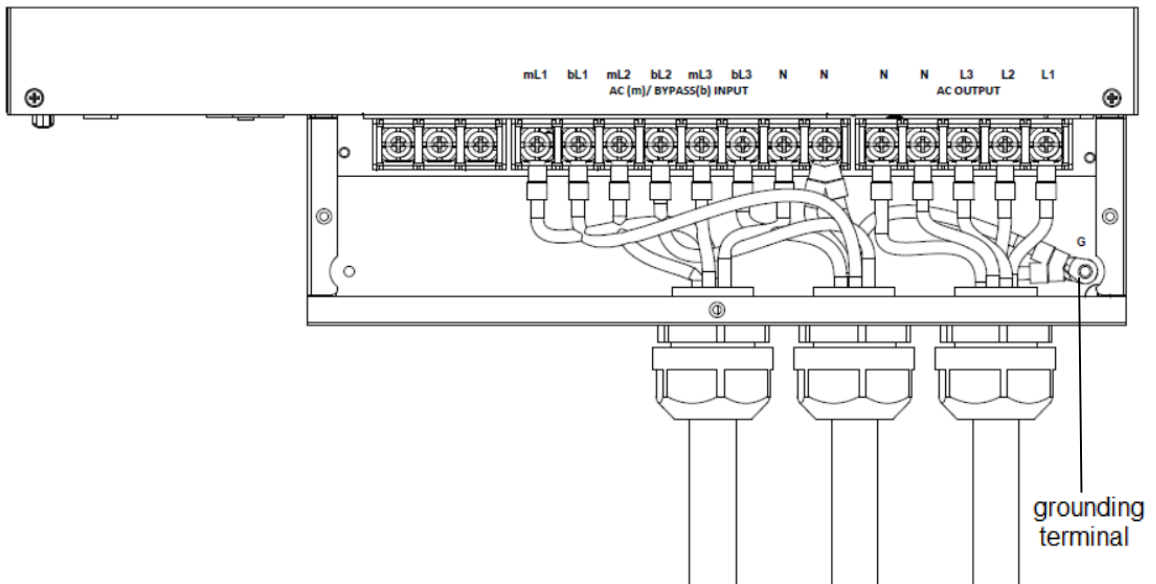
**(Figure 6-2: The Connection of Main Input Power Cable with AC Input Terminals of UPS)**

Step ② : Fix the bypass input power cable (6 pins) on the bypass input terminals and grounding terminal of the UPS. Please note that the 6 pins of the bypass input power cable should be connected to the right position of the terminals (bL1, bL2, bL3, N and grounding) as shown in **Figure 6-3**.



**(Figure 6-3: The Connection of the Bypass Input Power Cable with Bypass Input Terminals and Grounding Terminal of UPS)**

Step ③ : Fix the included output power cable (6 pins) on the output terminals and grounding terminal of the UPS. Please note that the 6 pins of the output power cable should be connected to the right position of the terminals (L1, L2, L3, N, N and grounding) as shown in **Figure 6-4**.



(Figure 6-4: the Connection of the Output Power Cable on the Output Terminals of the UPS and the Grounding Terminal.)

### 6.3. Main Input, Bypass Input and Output Connection of the MBB



#### **WARNING:**

The cables to be connected include the main input cable, the bypass input cable and the output cable. When choosing the cables, please follow the local wiring regulations and take into account the environmental conditions.

Regarding the nominal current of the MBB with different phase configurations (single-phase or three-phase), please refer to **Table 6-1**.

**Table 6-1: MBB Nominal Current**

Wiring configuration (Input Phase: Bypass Phase: Output Phase)	Nominal Input Phase Current* <sup>1</sup> (A)			Nominal Output Phase Current* <sup>2</sup> (A)		
	Rated Input Voltage			Rated Output Voltage		
	220/380V	230/400V	240/415V	220/380V	230/400V	240/415V
<b>(3:3:3)</b>	Main: 35A (3P) Bypass: 30.6A (3P)	Main: 34.1A (3P) Bypass: 29.3A (3P)	Main: 32.3A (3P) Bypass: 28.1A (3P)	30.3A (3P)	29A (3P)	27.8A (3P)
<b>(3:1:1)</b>	Main: 35A (3P) Bypass: 91.8A (1P)	Main: 34.1A (3P) Bypass: 87.9A (1P)	Main: 32.3A (3P) Bypass: 84.3A (1P)	90.9A (1P)	87A (1P)	83.4A (1P)



**NOTE:**

1. A maximum voltage drop of 4Vac on each cable core is allowed.
2. To avoid electromagnetic interference, do not loop the cable.
3. \*<sup>1</sup> Applicable to both main input and bypass input.
4. \*<sup>2</sup> The use of non-linear loads influences the selection of the output and bypass neutral cables. The neutral cable current may exceed the rated phase current and can be up to 1.732 times higher than the rated phase current. In such a condition, you have to use a cable with wider wire diameter.

**Table 6-2** lists the minimum cross-sectional area of the cable recommended to the user. You can select the appropriate cables according to **Table 6-1** and **Table 6-2**.

**Table 6-2: Recommended Cable Size (Environment Temperature: 25°C)**

Model (Input P: Bypass P: Output P)	Input		Output		Bypass		Neutral Line		Ground	
	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG
(3:3:3)	6	8	6	8	6	8	6	8	16	4
(3:1:1)	6	8	6 × 3PCS	8 × 3PCS	6 × 3PCS	8 × 3PCS	6 × 3PCS	8 × 3PCS	35	1



**NOTE:**

Only qualified personnel can perform installation, wiring, operation and maintenance. Prior to supplying any power to the UPS, make sure the MBB has been suitably grounded.

**External Protection Device**

You must install a circuit breaker (or other protection device) between the main AC source and the MBB; if you adopt dual-input configurations, you must also install a circuit breaker (or other protection device) between the bypass source and the MBB. Select the appropriate cables according to **Table 6-3**.

**Table 6-3: Protection Device Capacity**

<b>Model (Input P: Bypass P: Output P)</b>	<b>With RT-15K3P</b>	<b>With RT-20K3P</b>
<b>(3:3:3)</b>	50A/ Type D (main) 50A/ Type D (bypass)	63A/ Type D (main) 63A/ Type D (bypass)
<b>(3:1:1)</b>	50A/ Type D (main) 100A/ Type D (bypass)	63A/ Type D (main) 125A/ Type D (bypass)

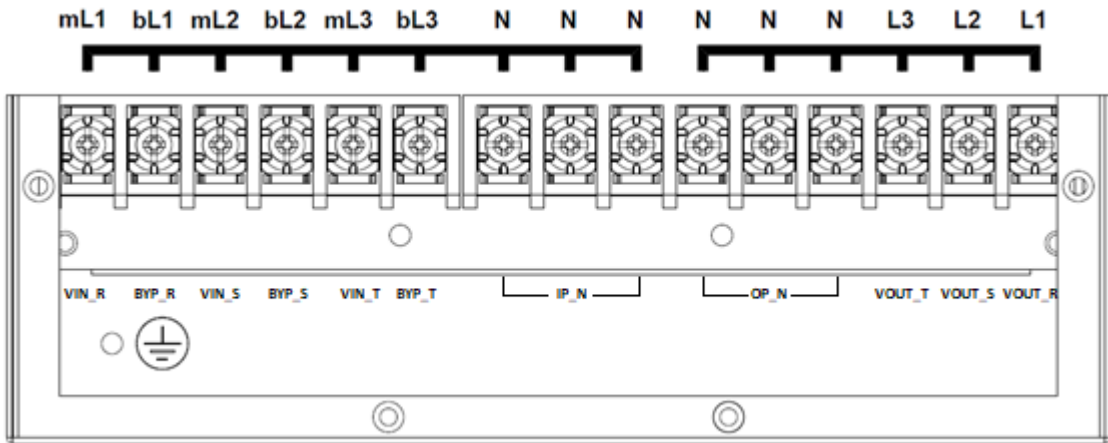
The section provides general guidance for qualified installation engineers. A qualified installation engineer should be aware of local wiring regulations and other relevant knowledge.



**NOTE:**

1. For dual-source input configurations, the main AC source and the bypass source must use the same neutral (N).
2. The three-phase UPS must be equipped with four-pole protection devices to cut off the power from four cables, and the single-phase UPS must be equipped with two-pole protection devices to cut off the power from 2 cables.


The power cable connection of the MBB needs to be connected through the input and output terminals at the rear of the MBB, as shown in **Figure 6-5**.



**(Figure 6-5: The Input and Output Terminals of the Rear Panel of the MBB)**

The wiring terminals include:

No.	Item	Description	Function
1	AC Input Terminals	Include mL1 (VIN_R) / mL2 (VIN_S) / mL3 (VIN_T) / N (IP_N) *1 terminals.	Connect to the main AC source.
2	Bypass Input Terminals	Include bL1 (BYP_R) / bL2 (BYP_S) / bL3 (BYP_T) / N (IP_N) *1 terminals.	Connect to the bypass AC source.
3	Ac Output Terminals	Include L1 (VOUT_R) / L2 (VOUT_S) / L3 (VOUT_T) / N (OP_N) terminals.	Connect to the critical loads.

4		Includes one grounding terminal.	<p>1. For UPS protective earthing: connects to the main AC source and bypass source*2.</p> <p>2. For bonding: connects to the critical loads.</p> <p>3. When performing grounding, please refer to the steps below. For the protective earthing. Please refer to <b>Figure 6-6</b> for the connection method.</p>
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**NOTE:**

\*1 For dual-source input configurations, the main AC source and the bypass source must use the same neutral (N).

\*2 For the UPS with dual-source input configuration only.

Regarding the connection of grounding terminal, please follow the steps below and connect the cables with grounding terminals in sequence as stated below and shown in **Figure 6-6**.

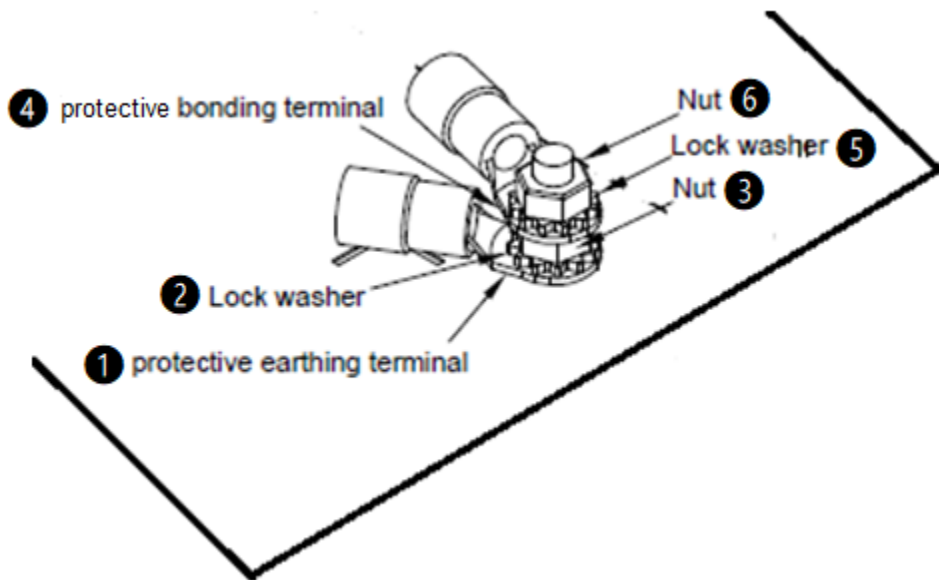
Step ① :

Connect the cable with protective earthing terminal ( ① ), and fix the cable with the lock washer ( ② ) and nut ( ③ ).

Step ② :

Connect another cable with protective bonding terminal ( ④ ), and fix the cable with the lock washer ( ⑤ ) and nut ( ⑥ ).



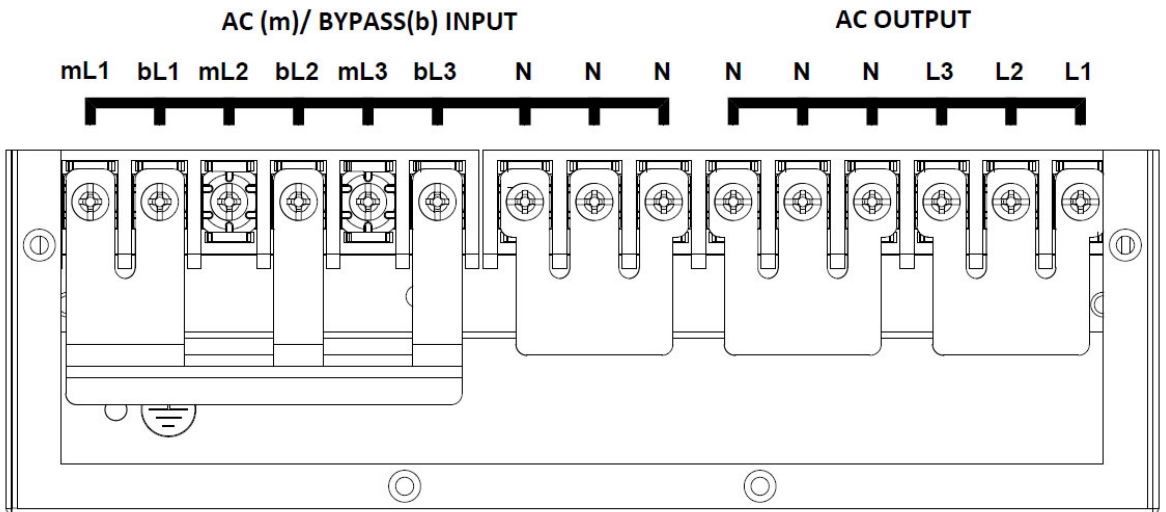


**(Figure 6-6: the Cable Connection with Protective Earthing Terminal and Protective Bonding Terminal )**

The MBB input can be set as single-source input or dual-source input and the MBB output can be set as three-phase or single-phase, which depends on the way you install the bus bars (provided in the package) and the output phase setting. There are four kinds of configurations for your choice. See **Chapter 6.3.1 ~ Chapter 6.3.4** below (the MBB wiring terminals are marked in block font).

### **6.3.1. Single Source Input & Single Phase Output**

1. Install the bus bars by following **Figure 6-7**.
2. Connect to AC source (L1/ L2/ L3/ N): connect L1 to **mL1**, **bL1**, **bL2**, or **bL3**; L2 to **mL2**; L3 to **mL3**; N to the **N** terminals.
3. Connect to the loads (L/ N): connect the load's L to **L1**, **L2**, or **L3** and N to the **N** terminals.



**(Figure 6-7: MBB Bus Bar Installation for Single Source Input & Single Phase Output Configuration)**

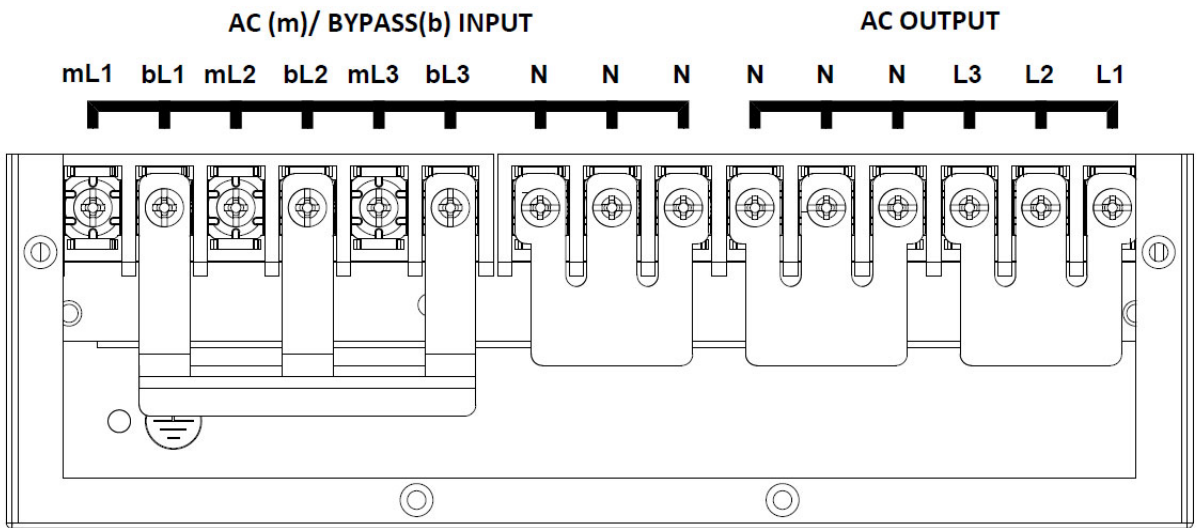
### 6.3.2. Dual Source Input & Single Phase Output

1. Install the bus bars by following **Figure 6-8**.
2. Connect to AC source (L1/ L2/ L3/ N): connect L1 to **mL1**; L2 to **mL2**; L3 to **mL3**; N\*1 to one of the **N** terminals.
3. Connect to bypass source (L/ N): connect L to **bL1**, **bL2**, or **bL3** ; N\*1 to two of the **N** terminals.
4. Connection to the loads (L/ N): connect the load's L to **L1**, **L2**, or **L3** and the load's N to one of the **N** terminals.



**NOTE:**

\*1 For dual-source input configurations, the main AC source and the bypass source must use the same neutral (N).



**(Figure 6-8: MBB Bus Bar Installation for Dual Source Input & Single Phase Configuration)**

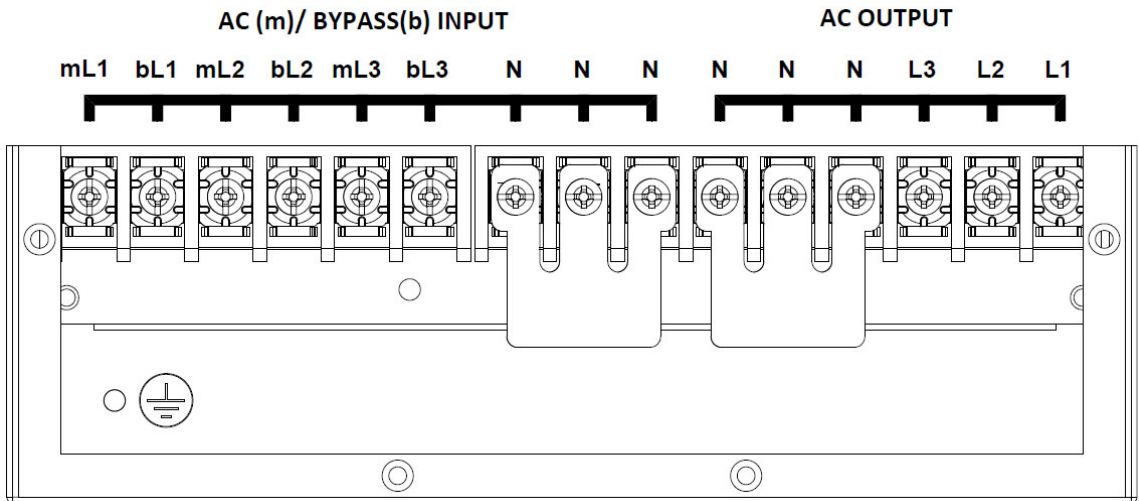
### 6.3.3. Dual Source Input & Three Phase Output

1. Install the bus bars following **Figure 6-9**.
2. Connect to AC source (L1/ L2/ L3/ N): connect L1 to **mL1**; L2 to **mL2**; L3 to **mL3**; N\*1 to one of the **N** terminals.
3. Connect to bypass source (L1/ L2/ L3/ N): connect L1 to **bL1**; L2 to **bL2**; L3 to **bL3**.
4. Connect to the loads (L1/ L2/ L3/ N): connect the loads' L1/ L2/ L3 to **L1/ L2/ L3** respectively and the loads' N to one of the **N** terminals.



**NOTE:**

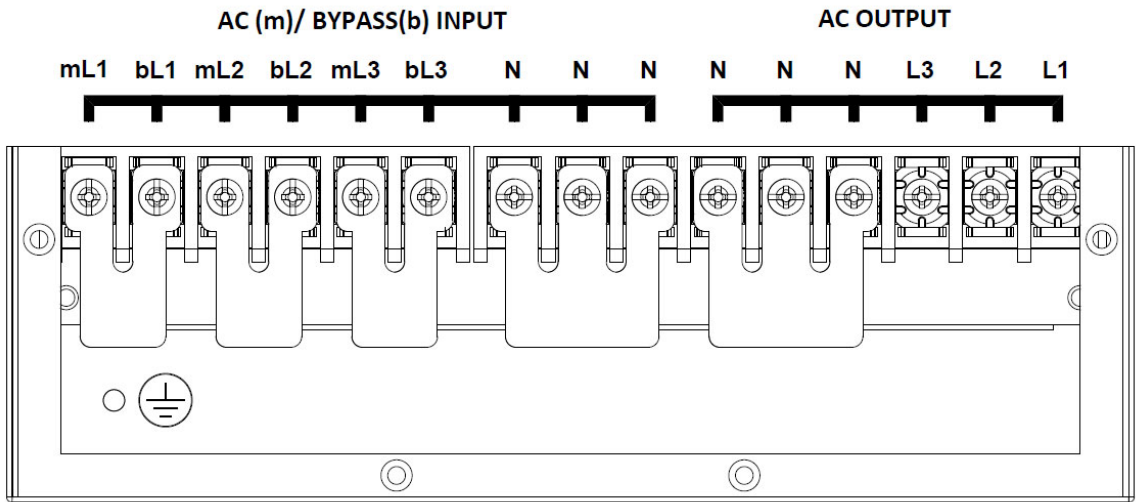
\*1 For dual-source input configurations, the main AC source and the bypass source must use the same neutral (N).



**(Figure 6-9: MBB Bus Bar Installation for Dual Source Input & Three Phase Output Configuration)**

### 6.3.4. Single Source Input & Three Phase Output

1. Install the bus bars by following **Figure 6-10**.
2. Connection to AC source (L1/ L2/ L3/ N): connect L1 to **mL1** or **bL1**; L2 to **mL2** or **bL2**; L3 to **mL3** or **bL3**; N to one of the UPS's **N** terminals.
3. Connection to the loads (L1/ L2/ L3/ N): connect the load's L1/ L2/ L3 to **L1/ L2/ L3** respectively and the load's N to one of the **N** terminals.

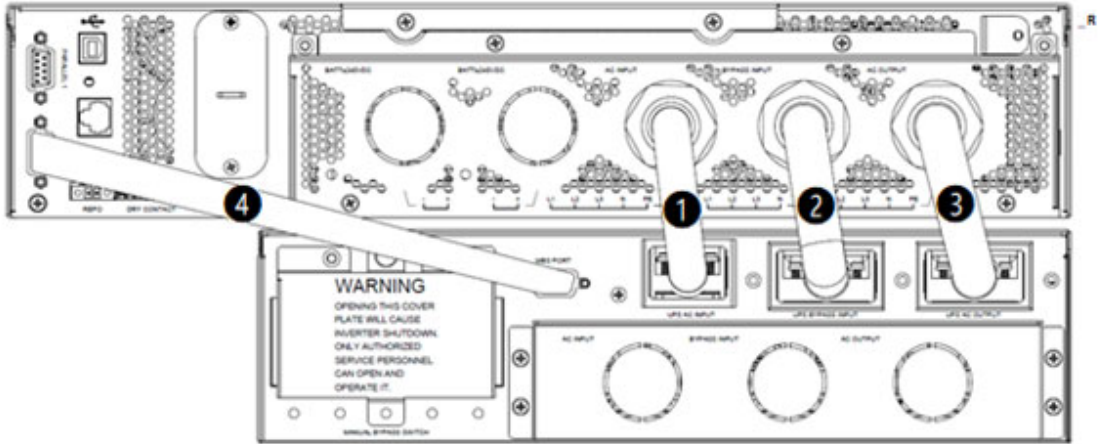


**(Figure 6-10: MBB Bus Bar Installation for Single Source Input & Three Phase Output Configuration)**

#### 6.4. Connection of the MBB and the UPS

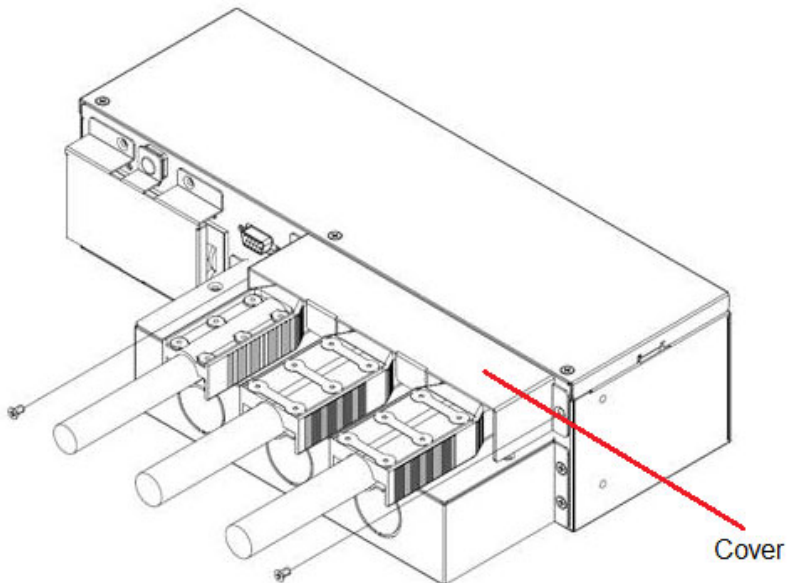
Insert three power cables of UPS to the ports on MBB's rear panel. Please see steps ① ② ③ in **Figure 6-11**.

Install the two ends of the provided MBB communication cable on the MBB's MBS port and the UPS's parallel port. Please see step ④ in **Figure 6-11**.



**(Figure 6-11: Installation for the Power Cables and the MBB's Communication Cable)**

Install the provided cover on power cables and tighten the provided screws (both are included in the package). Please see the step in **Figure 6-12**.



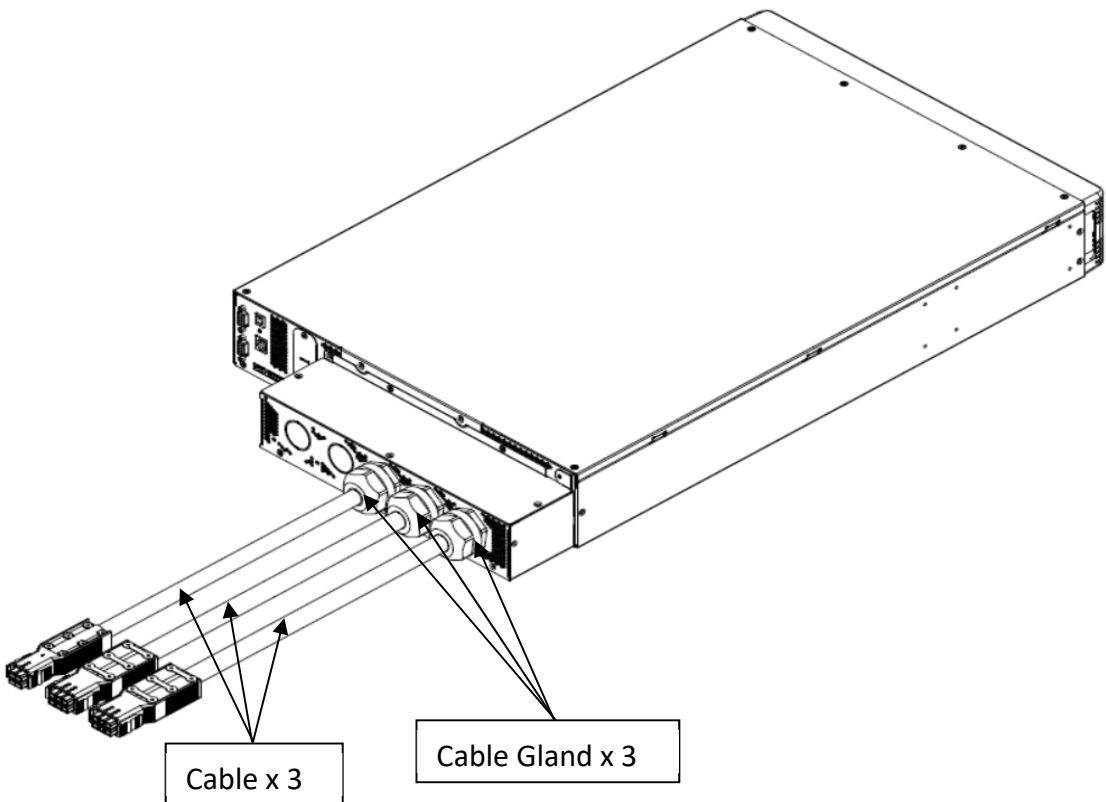
**(Figure 6-12: Installation for the Provided Cover)**



**NOTE:**

For the MBB connection, the power cables and cable glands must have been installed on the UPS before the UPS is shipped. However, this depends on different UPS model requirements.

As the MBB is optional, if the user purchased the UPS model without the power cables and cable glands already installed on the UPS before shipment, the three power cables need to be connected to the UPS's wiring terminals (including the AC input terminals, bypass input terminals, UPS output terminals and grounding terminal) according to the instructions in **6.2. UPS Model Without Power Cables** and **Figure 6-13**.



**(Figure 6-13: Cables and Cable glands Connection)**

## Chapter 7 : Operation Procedures

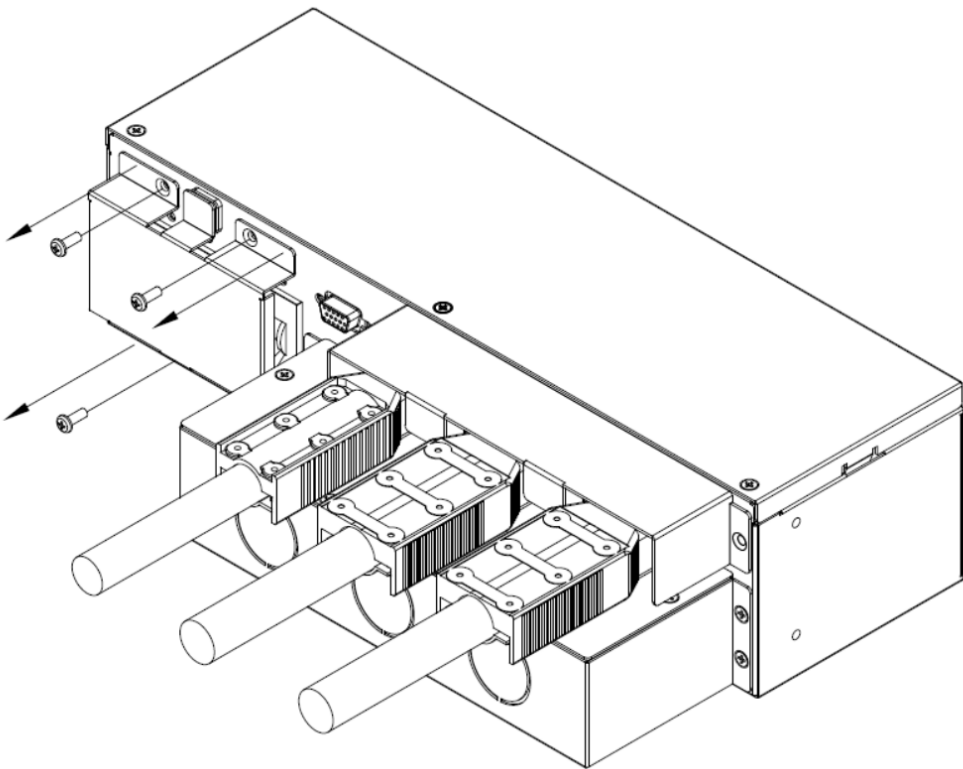
1. Make sure the voltage, the frequency and the phase sequence of the input and the bypass are in the operation range.
2. Turn on the main input and bypass input breaker.
3. Follow Delta Amplon RT Series 15/ 20kVA UPS **User Manual** to turn on the UPS.



## Chapter 8 : Maintenance Bypass

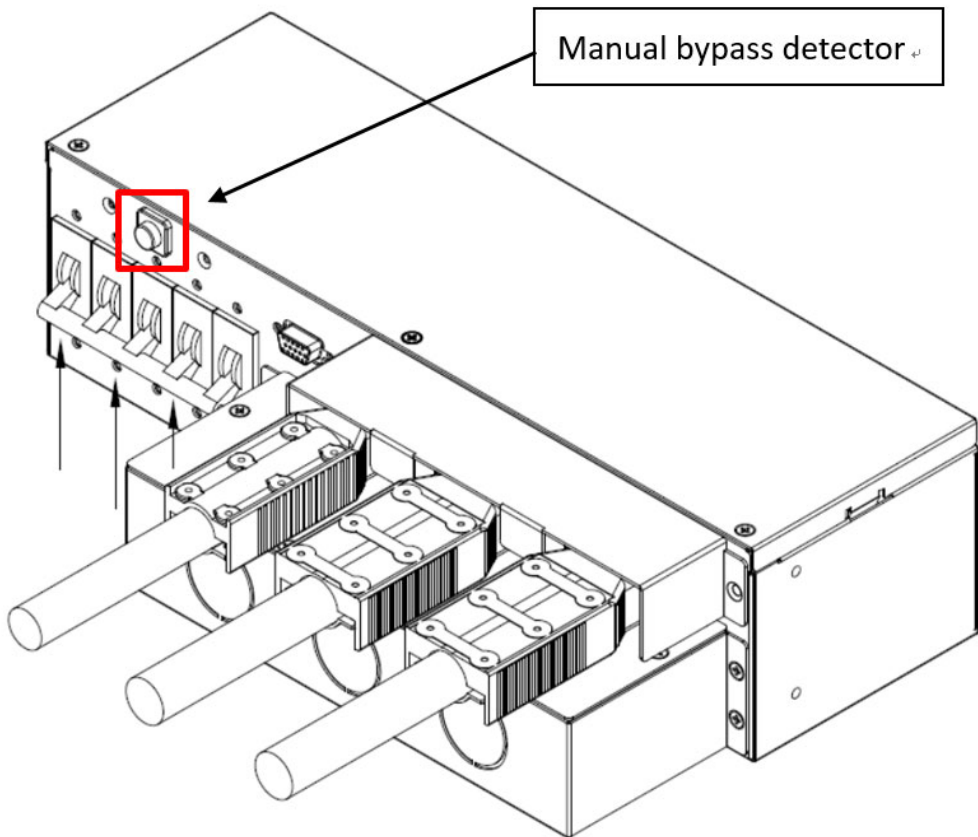
Follow the steps to let the output load powered by manual bypass when UPS needs maintenance.

1. Check the UPS is at bypass mode, if not, press and hold the UPS's ON/OFF button for 3 seconds, release it after you hear one beep, use the Scrolling Up or Down button to select 'Yes' and press the Enter button to confirm your selection. The inverter will be off and the UPS will transfer to run in bypass mode.
2. Loosen 3 screws and you can remove the warning cover of the manual bypass switch. Please see **Figure 8-1**.



(Figure 8-1: Loosen 3 Screws from the MBB)

3. Under the cover plate, there is a manual bypass detector (see Figure 8-2) that will be automatically activated to send the UPS a message of transferring into bypass mode once the cover plate is removed. After you confirm that the UPS has been run in bypass mode, turn on the manual bypass switch. Now, the connected loads are being powered by utility power. Please see **Figure 8-2**

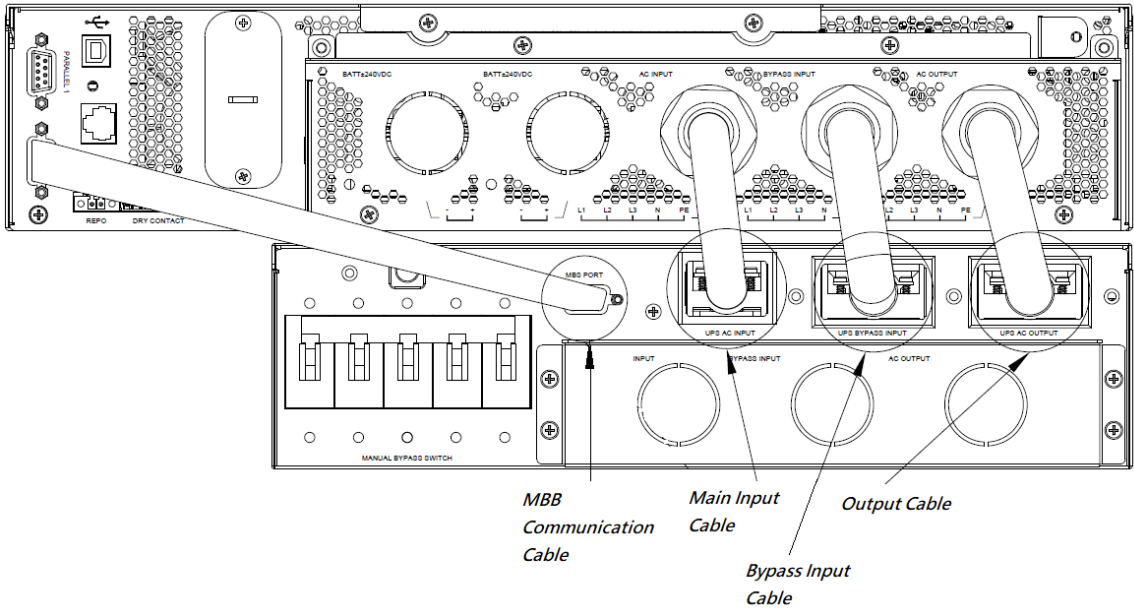


**(Figure 8-2: Turn on the MBB Manual Bypass Switch)**

4. Disassemble the provided cover on the three power cables (You can refer to **Figure 6-12**).
5. Disconnect the main input cable and bypass input cable first to turn off the output of UPS then disconnect the output cable and the MBB

communication cable from the rear panel of MBB as shown in **Figure 8-3**.

6. The power cables disassembly must be performed by qualified personnel.



**(Figure 8-3: Disassemble the Three Power Cables and the MBB Communication Cable from the Rear Panel of MBB.)**



**NOTE:**

You should remove the connection between the MBB and the UPS before disconnecting the battery pack with the UPS. Regarding the disassembly of the battery pack, please refer to the Delta battery pack **User Manual**.

## Appendix 1 : Technical Specifications

### Appendix 1 : Technical Specifications

	<b>Model</b>	<b>MBB-RT-15/20K WW2U</b>
<b>Input</b>	Nominal Voltage	220/380, 230/400, 240/415 Vac
	Nominal Current	35, 34.1, 32.3 A
	Connection	Terminal block
<b>Bypass</b>	Nominal Voltage	220/380, 230/400, 240/415 Vac
	Nominal Current	30.6, 29.3, 28.1 A per phase; Number of Phases: 3 $\Phi$
		91.8, 87.9, 84.3 A per phase; Number of Phases: 1 $\Phi$
Connection	Terminal block	
<b>Output</b>	Nominal Voltage	220/380, 230/400, 240/415 Vac
	Nominal Current	30.3, 29, 27.8 A per phase; Number of Phases: 3 $\Phi$
		90.9, 87, 83.4 A per phase; Number of Phases: 1 $\Phi$
	Connection	Terminal block
	Max. Load	20000VA, 20000W; Number of Phases: 1 $\Phi$
6667VA, 6667W per phase; Number of Phases: 3 $\Phi$		
<b>Communication Interfaces</b>		MBS Port $\times$ 1
<b>Physical</b>	Dimensions (W x D x H )	336 $\times$ 183 $\times$ 88 mm
	Weight	3.5 kg

<b>Environment</b>	Operating Altitude	0 ~ 3000m; 0 ~ 1000m (without derating)
	Operating Temperature* <sup>1</sup>	0°C ~ 55°C
	Storage Temperature	-15°C ~ 55°C
	Relative Humidity	5% ~ 95% (non-condensing)



**NOTE:**

\*<sup>1</sup> When the operating temperature is at 40 ~ 55°C, the UPS will be derated to 75% of its capacity.

## Appendix 2 : Warranty

### Appendix 2 : Warranty

Seller warrants this product, if used in accordance with all applicable instructions, to be free from original defects in material and workmanship within the warranty period. If the product has any failure problem within the warranty period, Seller will repair or replace the product at its sole discretion according to the failure situation.

This warranty does not apply to normal wear or to damage resulting from improper installation, operation, usage, maintenance or irresistible force (i.e. war, fire, natural disaster, etc.), and this warranty also expressly excludes all incidental and consequential damages.

Maintenance service for a fee is provided for any damage out of the warranty period. If any maintenance is required, please directly contact the supplier or Seller.



#### **WARNING:**

The individual user should take care to determine prior to use whether the environment and the load characteristic are suitable, adequate or safe for the installation and the usage of this product.

The User Manual must be carefully followed. Seller makes no representation or warranty as to the suitability or fitness of this product for any specific application.

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