VERTIV.

# Liebert®

## ITA2™ MBC™ Three-Phase Maintenance Bypass Cabinet, 8-10kVA, 208/220V

User Manual

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## Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures. Visit https://www.VertivCo.com/en-us/support/ for additional assistance.

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# IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS

This manual contains important safety instructions about installing and operating the Liebert ITA2 MBC (maintenance bypass cabinet). Read all safety, installation and operating instructions before beginning to install or operate the Liebert ITA2 or the Liebert ITA2 MBC. Adhere to all warnings on the unit and in this manual. Follow all operating and user instructions. Users must fully understand this equipment to install and operate it.

The Liebert ITA2 MBC is designed for commercial/industrial use only. It is not intended for use with life support or other designated critical devices. Maximum load must not exceed that shown on the unit's rating label. Install and operate the Liebert ITA2 MBC only in a clean indoor environment, free of conductive contaminants, moisture, flammable liquids, gases and corrosive substances. The Liebert ITA2 MBC contains no user-serviceable parts. Refer all faults to your local dealer, local Vertiv representative or Vertiv.

The Liebert ITA2 UPS system with Liebert ITA2 MBC is designed for use on a properly earthed (grounded), 208/220V AC supply. The system must be installed only by properly trained and qualified personnel. A qualified electrician must review and approve customer-supplied wiring, circuit breakers and intended loads and verify correct input, output and earth connections to ensure compliance with the technical standards and local electrical codes.

### ⚠ WARNING

Risk of electrical shock and high short circuit current. Can cause injury or death.
The following precautions must be observed before replacing the battery pack:

- Wear rubber gloves and boots
- Remove rings, watches and other metal objects.
- Use tools with insulated handles.
- Do not lay tools or other metal objects on the batteries.
- If the battery kit is damaged in any way or shows signs of leakage, contact your local Vertiv representative immediately.
- Do not dispose of batteries in a fire. The batteries may explode.
- Handle, transport and recycle batteries in accordance with local regulations.

### ⚠ WARNING

Risk of electrical shock, fire and high short circuit current. Can cause injury or death.
The Liebert ITA2 MBC has been designed and manufactured to ensure personal safety, but improper use can result in electrical shock or fire. To ensure safety, observe the following precautions:

- Turn Off and unplug the Liebert ITA2 MBC before cleaning it.
- Clean the unit with a dry cloth. Do not use liquid or aerosol cleaners.
- Never block or insert any objects into the ventilation holes or other openings of the Liebert ITA2 MBC.
- Do not place the Liebert ITA2 MBC power cord where it might be damaged.

### ⚠ WARNING

Risk of exposure to hazardous chemical.
This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**ELECTROMAGNETIC COMPATIBILITY**—The Liebert ITA2 MBC complies with the limits of Category C2, pursuant to IEC/EN/AS 62040-2 and for a Class A digital device, pursuant to Part 15 Subpart B of FCC rules. Operation is subject to the following conditions:

- The output cables must be no longer than 32ft (10m).
- This device must not cause harmful electromagnetic interference.
- This device must accept any interference received, including interference that may cause undesired operation. Operating this device in a residential area is likely to cause harmful interference that users must correct at their own expense.

The Liebert ITA2 MBC complies with the requirements of EMC Directive 2014/30/EU and the published technical standards. Continued compliance requires installation in accordance with these instructions and use of accessories approved by Vertiv.

## NOTICE

This is a Category C2 UPS product. In a residential environment, this product may cause radio interference, in which case the user may be required to take additional measures.

Operate the unit in an indoor environment only in an ambient temperature range of 32-104°F (0-40°C). Install it in a clean environment, free from moisture, flammable liquids, gases and corrosive substances.

This Liebert ITA2 MBC contains no user-serviceable parts except the internal battery pack. The unit's On/Off push buttons do not electrically isolate internal parts. Under no circumstances attempt to gain access internally, due to the risk of electric shock or burn.

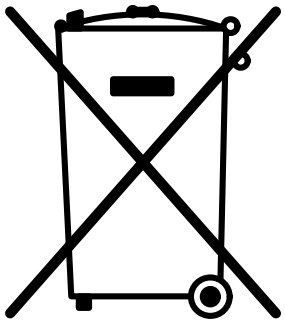
Do not continue to use the Liebert ITA2 MBC if the front panel indications are not in accordance with these operating instructions or the performance alters in use. Refer all faults to your Vertiv representative or Vertiv.

Servicing of batteries must be performed or supervised by properly trained and qualified personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from the batteries. Proper disposal of batteries is required. Refer to your local laws and regulations for disposal requirements.

Never block or insert any object into the ventilation holes or other openings.

## NOTICE

This product uses components that are dangerous for the environment, such as electronic cards and other electronic components. Any component that is removed must be taken to specialized collection and disposal centers. If this unit must be dismantled, this must be done by a specialized center for collection and disposal of electric and electrical appliances or other dangerous substances.



This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU.

Please be environmentally responsible and recycle this product through your recycling facility at its end of life. Do not dispose of this product as unsorted municipal waste. Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of WEEE.

The "crossed-out wheelie bin symbol" is placed on this product to encourage you to recycle whenever possible.

DO NOT CONNECT equipment that could overload the UPS or demand DC current from the Liebert ITA2 MBC, for example: electric drills, vacuum cleaners, laser printers, hair dryers or any appliance using half-wave rectification.

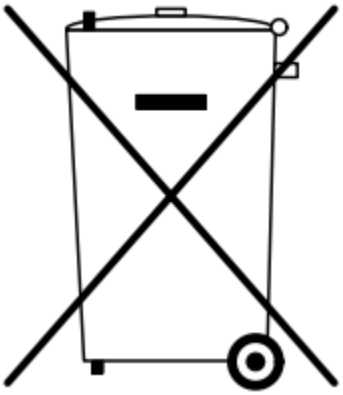
Storing magnetic media on top of the Liebert ITA2 MBC may result in data loss or corruption.

### Information for the Protection of the Environment

**UPS Servicing**—This unit makes use of components dangerous for the environment (electronic cards, electronic components). The components removed must be taken to specialized collection and disposal centers.

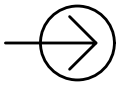
**Notice to European Union Customers**: Disposal of Old Appliances—This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/CE.

The symbol at right is placed on this product to encourage recycling wherever possible. Recycle this product through a recycling facility at the end of its service life. Do not dispose of this product as unsorted municipal waste.



Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of waste electrical and electronic equipment (WEEE).

**Table 1 GLOSSARY OF SYMBOLS**

| | |
|---|---|
|  | **Risk of electrical shock** |
|  | **Indicates caution followed by important instructions** |
|  | **AC input** |
|  | **AC output** |
|  | **Consult the manual** |
|  | **Recycle** |
|  | **Equipment grounding conductor** |
|  | **Bonded to ground** |
|  | **AC voltage** |

# 1.0 INTRODUCTION

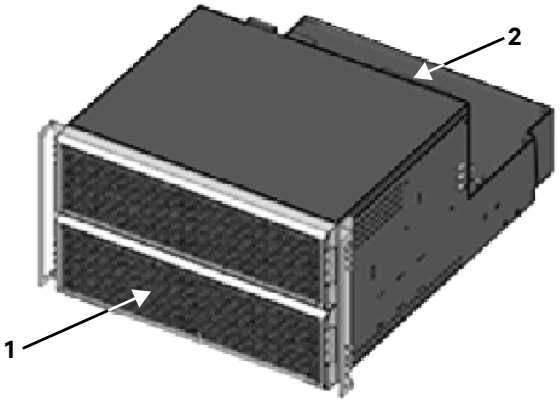
The Liebert ITA2 MBC is an option that allows isolating the UPS power module while maintaining power to the connected load.

This chapter details appearance, components and operation modes of the Liebert ITA2 MBC (maintenance bypass cabinet). **Table 6** details the unit's specifications.

## 1.1 Components

The appearance of the Liebert ITA2 MBC is shown in **Figure 1**.

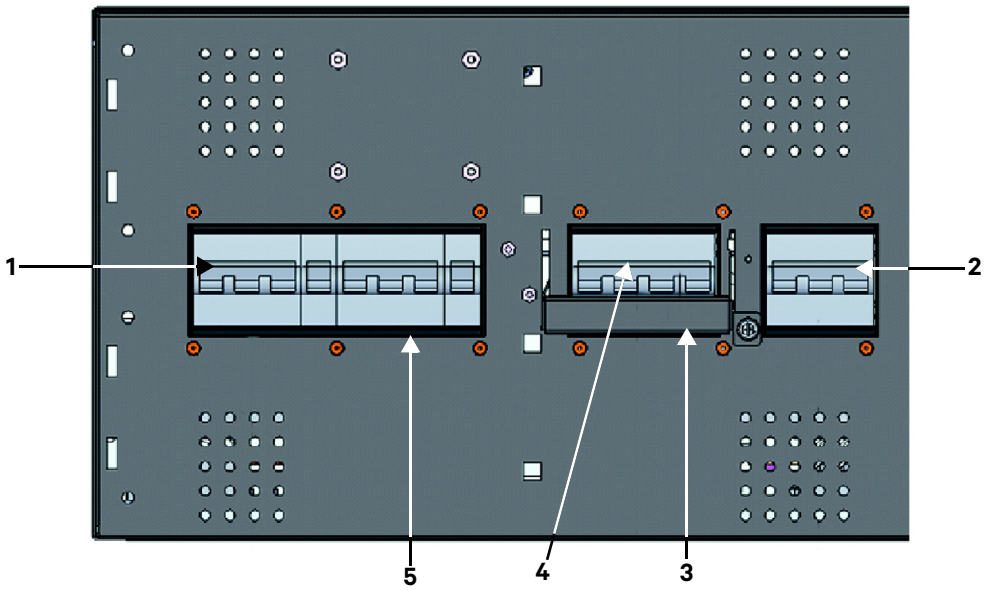
**Figure 1 Appearance of Liebert ITA2 MBC**




1. **Plastic Bezel**
2. **Rear Panel**

Removing the plastic bezel reveals front panel of the Liebert ITA2 MBC, as shown in **Figure 2**.

**Figure 2 Front panel of Liebert ITA2 MBC**

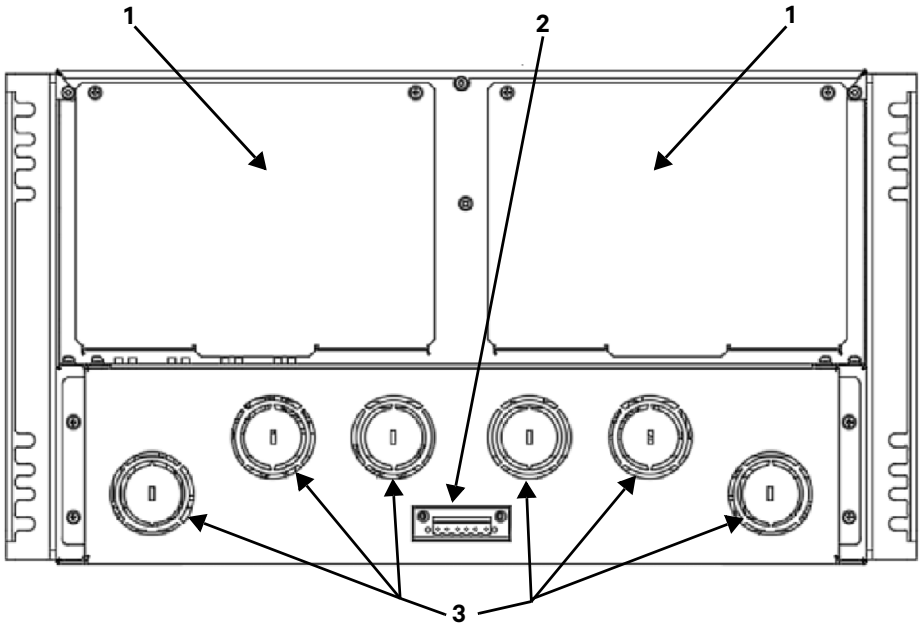



1. Rectifier Input Breaker
2. Maintenance Isolation Breaker
3. Maintenance Bypass Breaker Interlock
4. Maintenance Bypass Breaker
5. Bypass Isolation Breaker

Labels not shown.

**Figure 3** shows the rear panel of the Liebert ITA2 MBC.

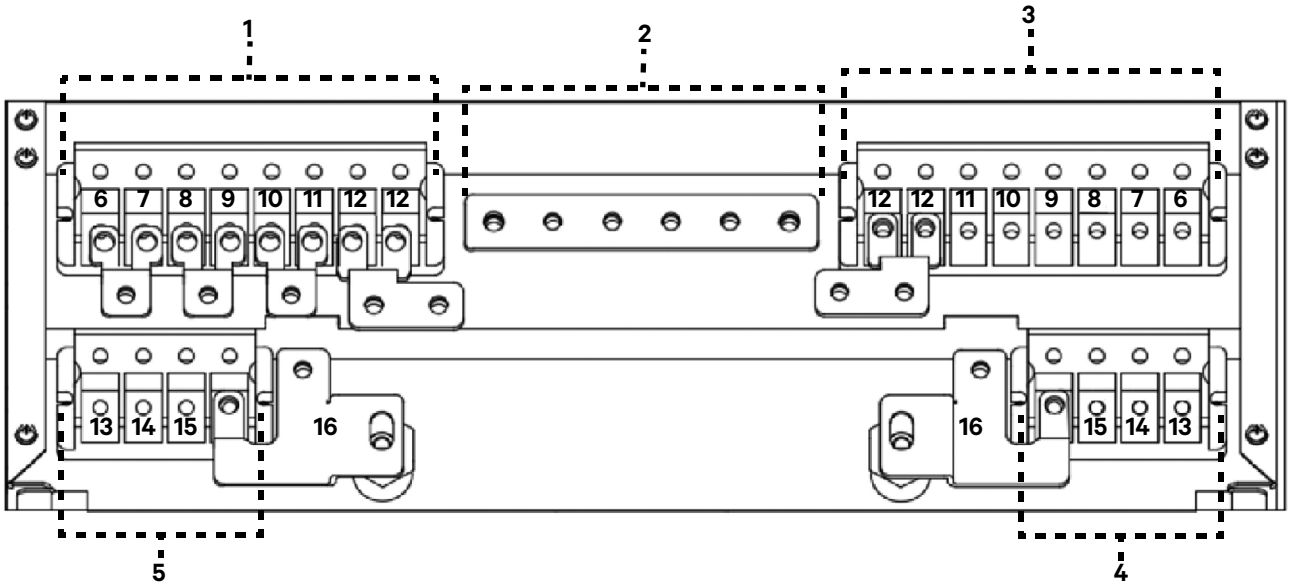
**Figure 3 Rear panel of the single POD**




1. POD Port Cover
2. Dry Contact Port
3. Cable Entry Knockouts on Conduit Box

Removing the conduit box reveals the Liebert ITA2 MBC's power distribution area, shown in **Figure 4**.

**Figure 4 Power distribution area of Liebert ITA2 MBC**




1. Main Input Terminal Blocks
2. PE: Ground
3. UPS Input Terminal Blocks
4. UPS Output Terminal Blocks
5. Main Output Terminal Blocks
6. rA: Rectifier Input A
7. bA: Bypass Input A
8. rB: Rectifier Input B
9. bB: Bypass Input B
10. rC: Rectifier Input C
11. bC: Bypass Input C
12. N: Neutral
13. A: Output Phase A
14. B: Output Phase B
15. C: Output Phase C
16. N: Neutral

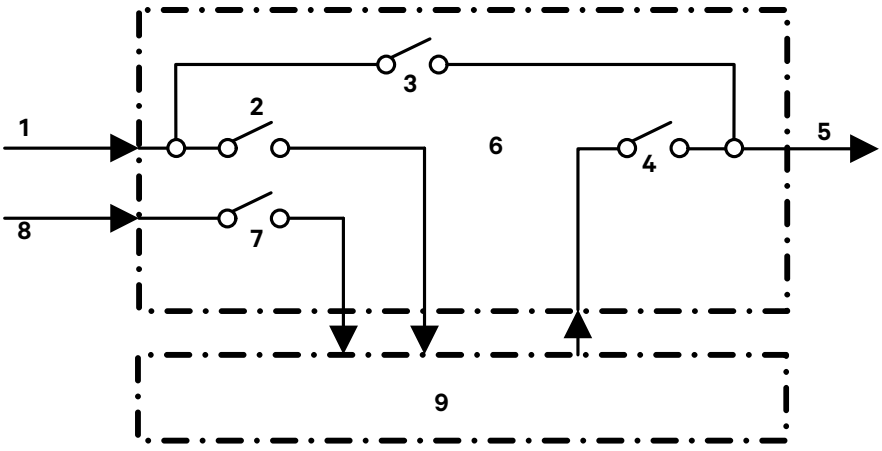
**NOTE**

*Copper shorting bars are factory-linked between rA and bA; rB and bB; rC and bC; and N.*

## 1.2 Operation Modes

The operating principle of the Liebert ITA2 MBC is shown in **Figure 5**.

**Figure 5 Operating principle of Liebert ITA2 MBC**




1. Bypass Input
2. Bypass Isolation Breaker
3. Maintenance Bypass Breaker
4. Maintenance Isolation Breaker
5. Output
6. Liebert ITA2 MBC
7. Rectifier Input Breaker
8. Main Input
9. Liebert ITA2 UPS

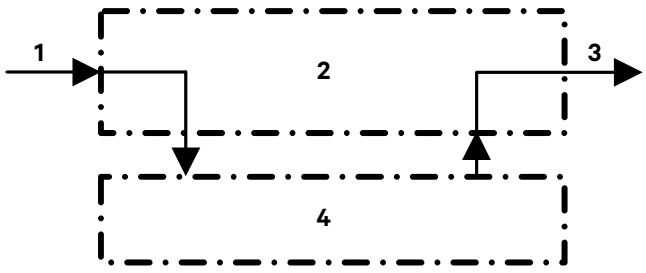
Two operation modes are available:

- UPS Mode
- Maintenance Bypass Mode.

## 1.3 UPS Mode

See **Figure 6** for details.

**Figure 6 UPS mode**



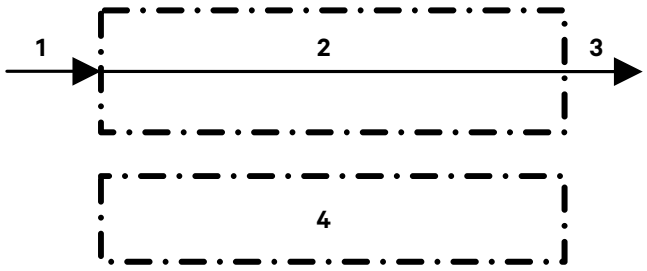

1. AC Input
2. Liebert ITA2 MBC
3. To Load
4. Liebert ITA2 UPS

Under UPS mode, the UPS can provide continuous, high quality AC power.

## 1.4 Maintenance Bypass Mode

See **Figure 7** for details.

**Figure 7 Maintenance bypass mode**




1. AC Input 2. Liebert ITA2 MBC 3. To Load 4. Liebert ITA2 UPS

In maintenance bypass mode, the UPS is bypassed and the load is powered via the maintenance bypass breaker.

# 2.0 INSTALLATION AND OPERATION

This chapter introduces the mechanical installation, cable connection and commissioning of the Liebert ITA2 MBC.

## 2.1 Mechanical Installation

**NOTE**

*Only Vertiv-authorized personnel should install and operate the Liebert ITA2 MBC.*

The Liebert ITA2 MBC may be installed in either a tower or rack configuration.

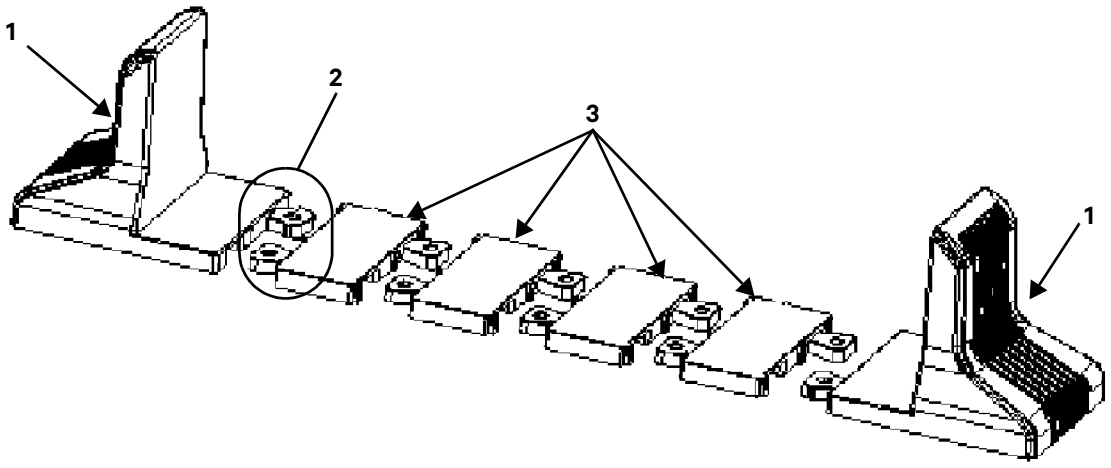
Prepare the tools: Phillips screwdriver, adjustable wrench, torque wrench.

### 2.1.1 Tower Installation

To install the UPS:

1. Take out the support base extension from the accessories
2. Assemble a pair of support bases and a support base extension (accessory) together through the fastenings, as shown in **Figure 8**.
3. Place the assembly where the UPS will be installed.

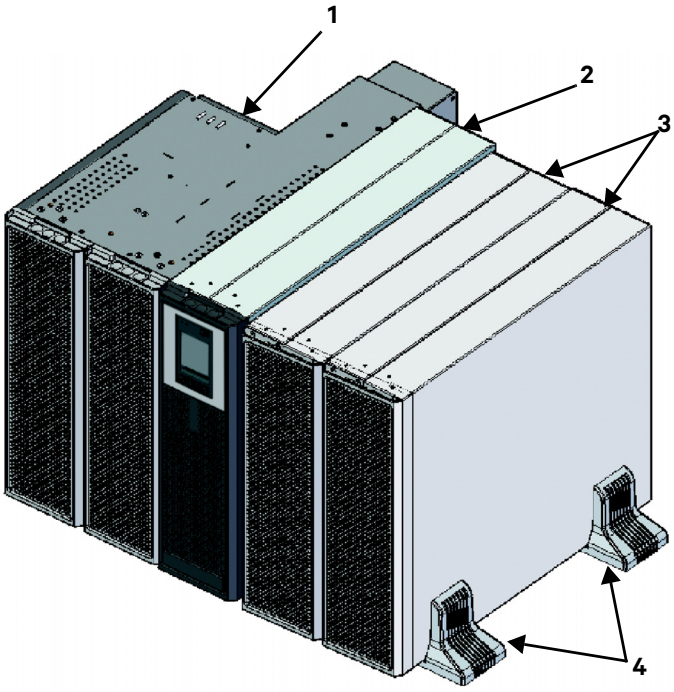
**Figure 8 Connecting the support base with support base extension**




1. Support Base
2. Fasteners
3. Support Base Extensions

4. Place the Liebert ITA2 MBC, UPS and battery modules on the support bases and support base extensions, as shown in **Figure 9**.

**Figure 9 Liebert ITA2 MBC, UPS and battery module Installation complete**




1. Liebert ITA2 MBC
2. Liebert ITA2 UPS
3. Liebert ITA2 Battery Cabinets, 2
4. Support Base

### 2.1.2 Rack Installation

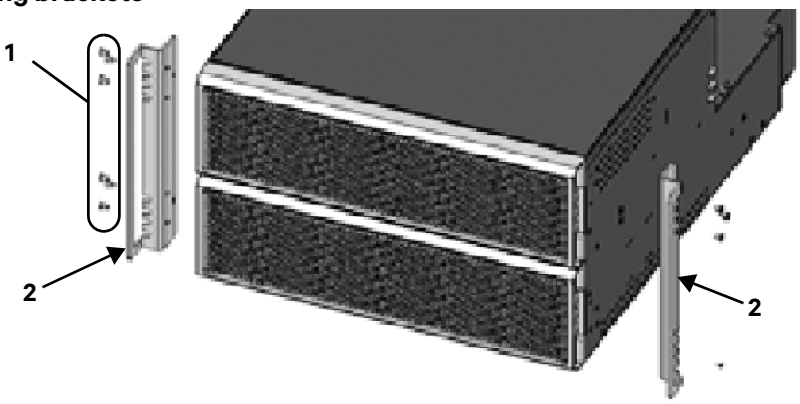
**NOTICE**

Risk of improper transport. Can cause property damage.

Do not lift or carry the Liebert ITA2 UPS or MBC with the brackets. They are intended to support the units in the rack. Using them to lift the unit may cause them to break.

1. Use M4 × 10 screws (12PCS) to attach two brackets to the Liebert ITA2 MBC front panel, one on each side as shown in **Figure 10**.

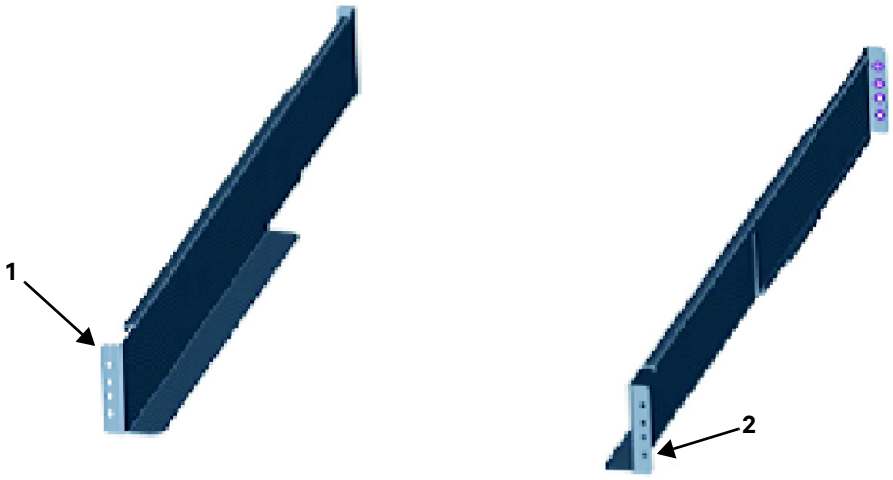
**Figure 10 Installing brackets**




1. M4*10 Screws, 12
2. Bracket, 2

2. Install the guide rails.
   a. Take out the guide rails (one left guide rail and one right guide rail), guide rail screws and panel screws from the package.
   b. Distinguish the left guide rail and the right guide rail according to **Figure 11**, and confirm their retractable function.

**Figure 11 Guide rail orientation for installation**

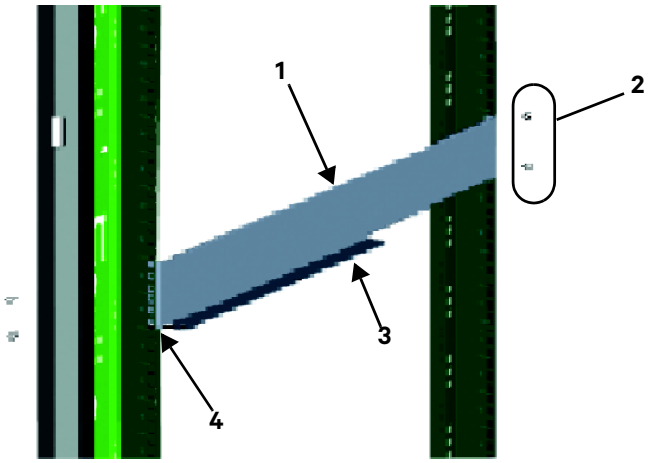



1. Left guide rail
2. Right guide rail

(Flanges point to outside of rack.)

   c. Adjust the length of the guide rail based on the dimensions of the rack.
   d. Align the installation holes of the guide rail with the square holes of the rack.
   e. Attach the guide rail on the rack through the provided guide rail screws.
   Eight guide rail screws are provided; each guide rail requires four guide rail screws, as shown in **Figure 12**.

**Figure 12 Installing the left guide rail**




1. Guide Rail (left rail shown)
2. Guide Rail Screws, 4, Phillips
3. Guide Rail Base Support
4. Square Holes

**NOTE**

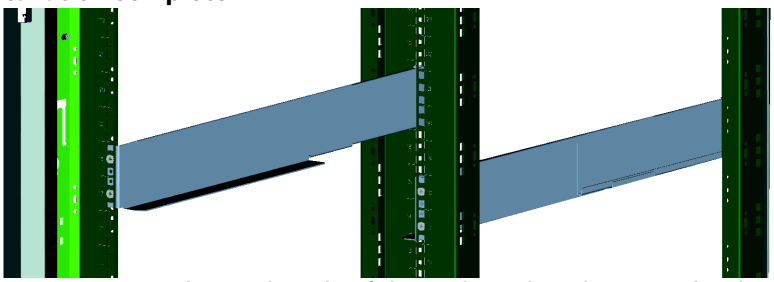
*The guide rail base support must be nearer the front of the rack.*

*Each end of one guide rail has six installation holes. Vertiv recommends using the top and bottom installation holes (from top to bottom, installation Hole 1 and installation Hole 4).*

*Do not use the two installation holes in the middle when attaching the guide rail. The middle holes are intended to secure the Liebert ITA2 MBC once it is installed on the rack rails.*

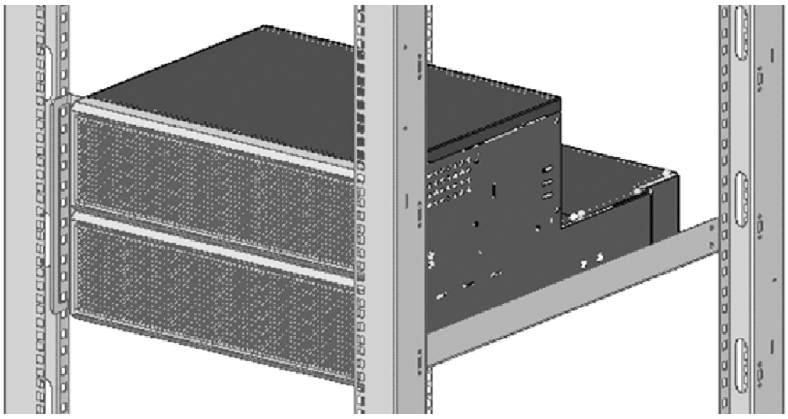
The guide rail installation is finished, as shown in **Figure 13**.

**Figure 13 Guide rail installation complete**



3. Place the Liebert ITA2 MBC on the guide rails of the rack, and push it completely into the rack.
4. Use four panel screws (M6 × 16) to attach the Liebert ITA2 MBC on the rack through the brackets, as shown in **Figure 14**.

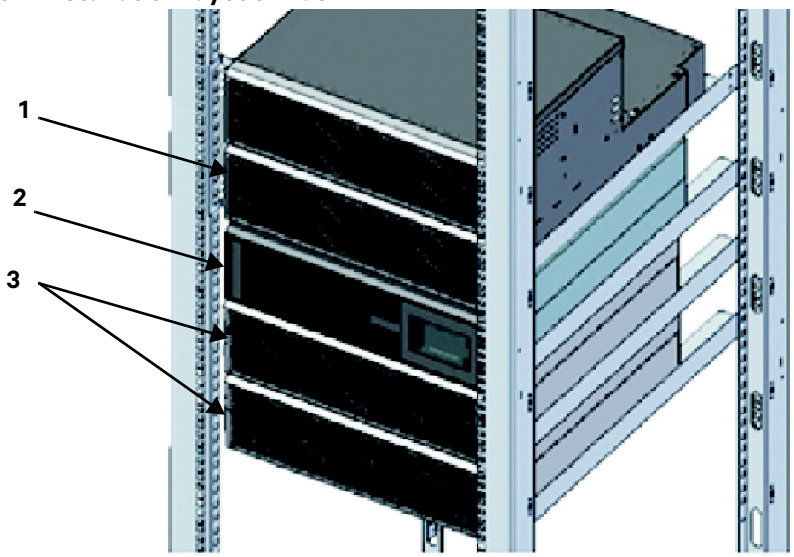
**Figure 14 Installing the Liebert ITA2 MBC**



**NOTE**

*When the Liebert ITA2 MBC is installed with battery modules and UPS's, the battery modules must be installed at the bottom, the UPS's in the middle and the Liebert ITA2 MBC at the top to facilitate cable connection and operation. See* ***Figure 15****.*

**Figure 15 System installation layout—rack**




1. Liebert ITA2 MBC 2. Liebert ITA2 UPS 3. Batteries, 2

## 2.2 Connecting Liebert ITA2 MBC Cables

### 2.2.1 Selecting Cables

**NOTE**

*Before connecting the cables between the Liebert ITA2 MBC and UPS, make sure that all the circuit breakers on the Liebert ITA2 MBC front panel are open. Ensure that the feeder breakers are open and locked and tagged to prevent inadvertent operation by unauthorized personnel.*

I/O cables and signal cables are required for connection. When connecting the cables, you should follow the local wiring regulations, take the environment situation into account.

The maximum current in different operating modes and the recommended power cables and plugs are listed in **Tables 2** through **4**.

**Table 2 Liebert ITA2 MBC currents and cables—User and UPS rectifier input**

| Unit Rating | Maximum Input Current, A | 75°C THW Copper Wire (Phase) * Number of Cables per Phase: 1 | 75°C THW Copper Wire (Neutral) * Number of Cables: 1 | 75°C THW Copper Wire (Ground) * Number of Cables: 1 |
|---|---|---|---|---|
| 8KVA | 24 | 8AWG | 8AWG | 10AWG |
| 10KVA | 37 | 6AWG | 6AWG | 10AWG |

**Table 3 Liebert ITA2 MBC currents and cables—User and UPS bypass input and output**

| Unit Rating | Maximum Input Current (A) | 75°C THW Copper Wire (Phase) | 75°C THW Copper Wire (Neutral) | 75°C THW Copper Wire (Ground) |
|---|---|---|---|---|
| 8KVA | 23 | 10AWG | 10AWG | 10AWG |
| 10KVA | 28 | 8AWG | 8AWG | 10AWG |

**Table 4 Ring terminal part numbers**

| | AWG ($mm^2$) | | |
|---|---|---|---|
| | **10 (5.26)** | **8 (8.36)** | **6 (13.3)** |
| **Part #** | McMaster-Carr: 7113K462 | McMaster-Carr: 7113K444 | McMaster-Carr: 7113K366 |
| | Thomas & Betts: RC10-14 | Thomas & Betts: RDV717 | Thomas & Betts: RE6-14 |
| | Tyco Electronics: 1577648-1 | Tyco Electronics: 132331-1 | — |

**NOTE**

*The wire size range for Liebert ITA2 MBC terminal blocks: Max. 4AWG, min. 14AWG.*

*Recommended torque value for phase terminal block: 35 lbf.in of 4-6 AWG; 25 lbf.in of 8 AWG; 20 lbf.in of 10-14AWG; Recommended torque value for neutral and ground busbar: 43 lbf.in.*

### 2.2.2 Connecting Power Cables

**NOTE**

*The terminal blocks use captive screws for connecting phase cables. The neutral cables and ground cable are attached to the copper bars with captive screws.*

## 2.3 Single-Input Configuration—Factory Default

Remove the conduit box from the Liebert ITA2 MBC and open the knockout hole, route cables through the conduit, and then connect them to terminal block of the Liebert ITA2 MBC. The conduit size and wiring method must be in accordance with all local, regional and national codes and regulations, including NEC ANSI/NFPA 70.

### 2.3.1 Connecting the Main Input Cables-Single Input

Leave the shorting busbars installed on the main input terminals (see **Figure 16**, Item 1). Make these connections:

- Input wiring Phase A to the shorting bar between Terminals 6-7
- Phase B to the shorting bar between Terminals 8-9
- Phase C to the shorting bar between Terminals 10-11.
- Input neutral to the shorting bar on Terminal 12
- Ground to the ground (PE) busbar.

### 2.3.2 Connecting the Main Output Cables-Single Input

The Liebert ITA2 MBC is capable of hardwire output in addition to output through the integrated distribution ports. If hard wiring to a dedicated output distribution panel (see **Figure 16** Item #5), make these connections:

- Phase A to Terminal 13
- Phase B to Terminal 14
- Phase C to Terminal 15
- Output neutral to busbar 16
- Safety ground to the ground (PE) busbar.

### 2.3.3 Cable Connections from the Liebert ITA2 MBC to the UPS—Single-Input

#### Single-Input Hardwire Connections—Rectifier Input from MBC

Remove the shorting busbars on the UPS input terminal block on Terminals 11, 12, and 13.

With the shorting busbars removed from the UPS input terminal block, on the MBC unit, refer to **Figure 16**, Item #3 and **Figure 17**; make these connections:

- Phase A cable from MBC Terminal 6 to UPS Terminal 11
- Phase B cable from MBC Terminal 8 to UPS Terminal 13
- Phase C from MBC Terminal 10 to UPS Terminal 15
- Neutral from MBC Terminal 12 to UPS Terminal 17
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 10.

#### Hardwire Connections—UPS Bypass Input

With the shorting busbars removed on the UPS input terminal block. On the MBC unit, refer to **Figure 16** Item #3 and **Figure 17**; make these connections:

- Phase A cable from MBC Terminal 7 to UPS Terminal 12
- Phase B cable from MBC Terminal 9 to UPS Terminal 14
- Phase C from MBC Terminal 11 to UPS Terminal 16
- Neutral from MBC Terminal 12 to UPS Terminal 18
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 10.

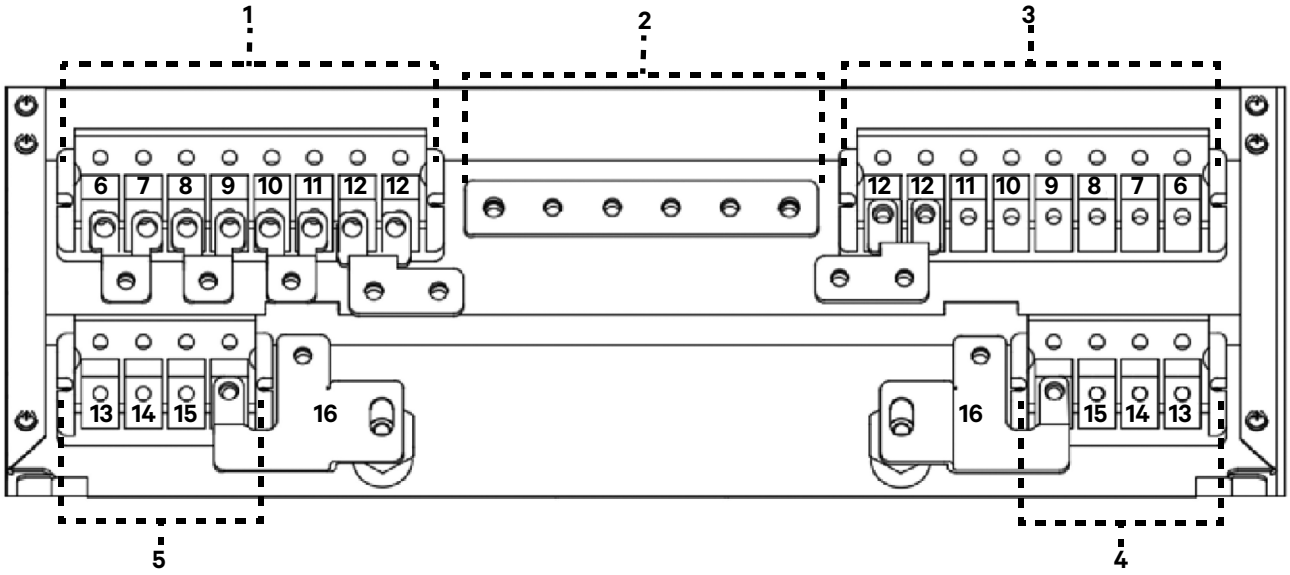
#### Single-Input Hardwire Connections—UPS Output to MBC

The Liebert ITA2 UPS has two output terminal block sections. One is always On and the other is programmable. These instructions will list the always-on connections; the programmable connections will be inside parentheses.

On the MBC unit, using **Figure 16** Item #4 and **Figure 17**, make these connections:

- Phase A cable from MBC Terminal 13 to UPS Terminal 4 (9)
- Phase B cable from MBC Terminal 14 to UPS Terminal 3 (8)
- Phase C cable from MBC Terminal 15 to UPS Terminal 2 (7)
- Neutral cable from MBC Terminal 16 to UPS Terminal 5 (6)
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 1.

**Figure 16 Liebert ITA2 MBC cable connections**




1. Main Input Terminal Blocks
2. PE: Ground
3. UPS Input Terminal Blocks
4. UPS Output Terminal Blocks
5. Main Output Terminal Blocks
6. rA: Rectifier Input A
7. bA: Bypass Input A
8. rB: Rectifier Input B
9. bB: Bypass Input B
10. rC: Rectifier Input C
11. bC: Bypass Input C
12. N: Neutral
13. A: Output Phase A
14. B: Output Phase B
15. C: Output Phase C
16. N: Neutral

**NOTE**

*Copper shorting bars are factory-linked between rA and bA; rB and bB; rC and bC; and N.*

## 2.4 Dual-Input Configuration

Remove the conduit box of Liebert ITA2 MBC and open the knockout hole, route cables through the conduit and connect them to terminal block of Liebert ITA2 MBC. The conduit size and wiring method must be in accordance with all local, regional and national codes and regulations, including NEC ANSI/NFPA 70.

### 2.4.1 Dual-Input Configuration—Main Input

A dual-input Liebert ITA2 UPS requires that both feeds be from the same source. For the main input to the Liebert ITA2 MBC refer to **Figure 16** Item #1, remove the shorting busbars between Terminals 6-7, 8-9 and 10-11.

### 2.4.2 Dual-Input Configuration—Rectifier Input

Make these connections:

- Input wiring Phase A cable to MBC Terminal 6
- Input wiring Phase B cable to MBC Terminal block 8
- Input wiring Phase C cable to MBC Terminal 10
- Input neutral cable to MBC Terminal 12
- Equipment ground cable to MBC ground (PE) busbar

### 2.4.3 Dual-Input Configuration—Bypass Input

Make these connections:

- Input bypass wiring Phase A cable to MBC Terminal 7
- Input bypass wiring Phase B cable to MBC Terminal block 9
- Input bypass wiring Phase C cable to MBC Terminal 11
- Input bypass neutral cable to MBC Terminal 12
- Equipment ground cable to MBC ground (PE) busbar

### 2.4.4 Dual-Input Configuration—Main Output

The Liebert ITA2 MBC is capable of hardwire output in addition to output from the integrated distribution ports. If hard wiring to a dedicated output distribution panel (see **Figure 16** Item #5), make these connections:

- Phase A to terminal 13
- Phase B to terminal 14
- Phase C to terminal 15
- Output neutral to busbar 16
- Safety ground to the ground (PE) bus bar

### 2.4.5 Cable Connections from the Liebert ITA2 MBC to the UPS—Dual-Input

#### Hardwire Connections—UPS Rectifier Input

Remove the shorting busbars on the UPS input terminal block on Terminals 11, 12, and 13.

With the shorting busbars removed from the UPS input terminal block, on the MBC unit, refer to **Figure 16**, Item #3 and **Figure 17**; make these connections:

- Phase A cable from MBC Terminal 6 to UPS Terminal 11
- Phase B cable from MBC Terminal 8 to UPS Terminal 13
- Phase C from MBC Terminal 10 to UPS Terminal 15
- Neutral from MBC Terminal 12 to UPS Terminal 17
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 10.

#### Hardwire Connections—UPS Bypass Input

Leave the shorting busbars in place on the UPS input terminal block. On the MBC unit, refer to **Figure 16** Item #3 and **Figure 17**; make these connections:

- Phase A cable from MBC Terminal 7 to UPS Terminal 12
- Phase B cable from MBC Terminal 9 to UPS Terminal 14
- Phase C from MBC Terminal 11 to UPS Terminal 16
- Neutral from MBC Terminal 12 to UPS Terminal 18
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 10.

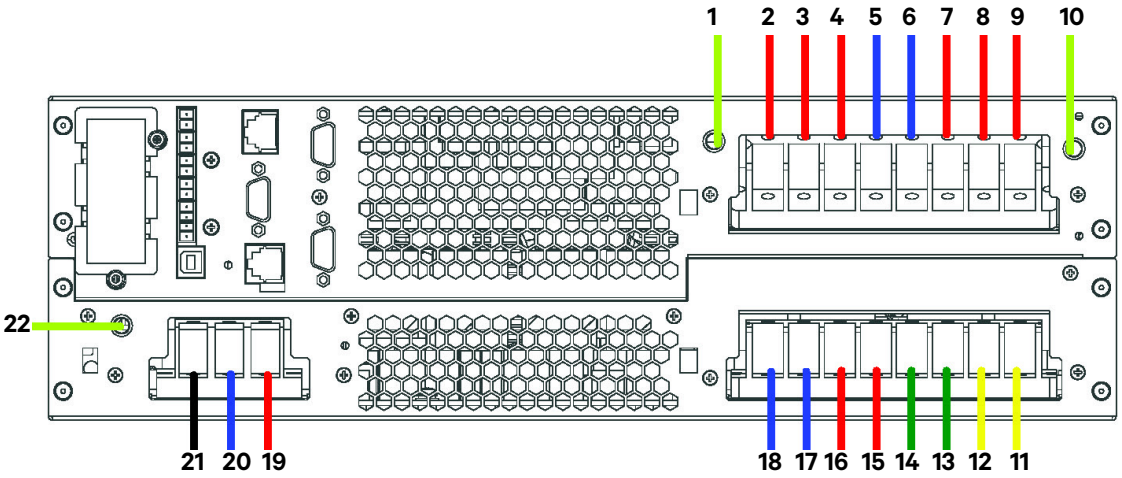
#### Hardwire Connections—UPS Output

The Liebert ITA2 UPS has two output terminal block sections. One is always On and the other is programmable. These instructions will list the always-on connections; the programmable connections will be inside parentheses.

On the MBC unit, refer to **Figure 16** Item #4 and **Figure 17**; make these connections:

- Phase A cable from MBC Terminal 13 to UPS Terminal 4 (9)
- Phase B cable from MBC Terminal 14 to UPS Terminal 3 (8)
- Phase C cable from MBC Terminal 15 to UPS Terminal 2 (7)
- Neutral cable from MBC Terminal 16 to UPS Terminal 5 (6)
- Safety ground cable from MBC ground (PE) busbar to UPS Ground Stud 1.

**Figure 17 Liebert ITA2 UPS cable connections**




1. PE: Output PE Terminal
2. C: AC Output Terminal Phase C
3. B: AC Output Terminal Phase B
4. A: AC Output Terminal Phase A
5. N: Output Neutral Line Terminal
6. N: Output Neutral Line Terminal
7. pC: Programmable AC Output Terminal Phase C
8. pB: Programmable AC Output Terminal Phase B
9. pA: Programmable AC Output Terminal Phase A
10. PE: Input PE Terminal.
11. rA: AC Rectifier Input Phase A
12. bA: Bypass Input Phase A
13. rB: AC Rectifier Input Phase B
14. bB: Bypass Input Phase B
15. rC: AC Rectifier Input Phase C
16. bC: Bypass Input Phase C
17. N: Output Neutral Line Terminal
18. N: Output Neutral Line Terminal
19. BAT+: Battery Positive Terminal
20. BATN: Battery Neutral Terminal
21. BAT-: Battery Negative Terminal
22. Battery PE Terminal

**NOTE**

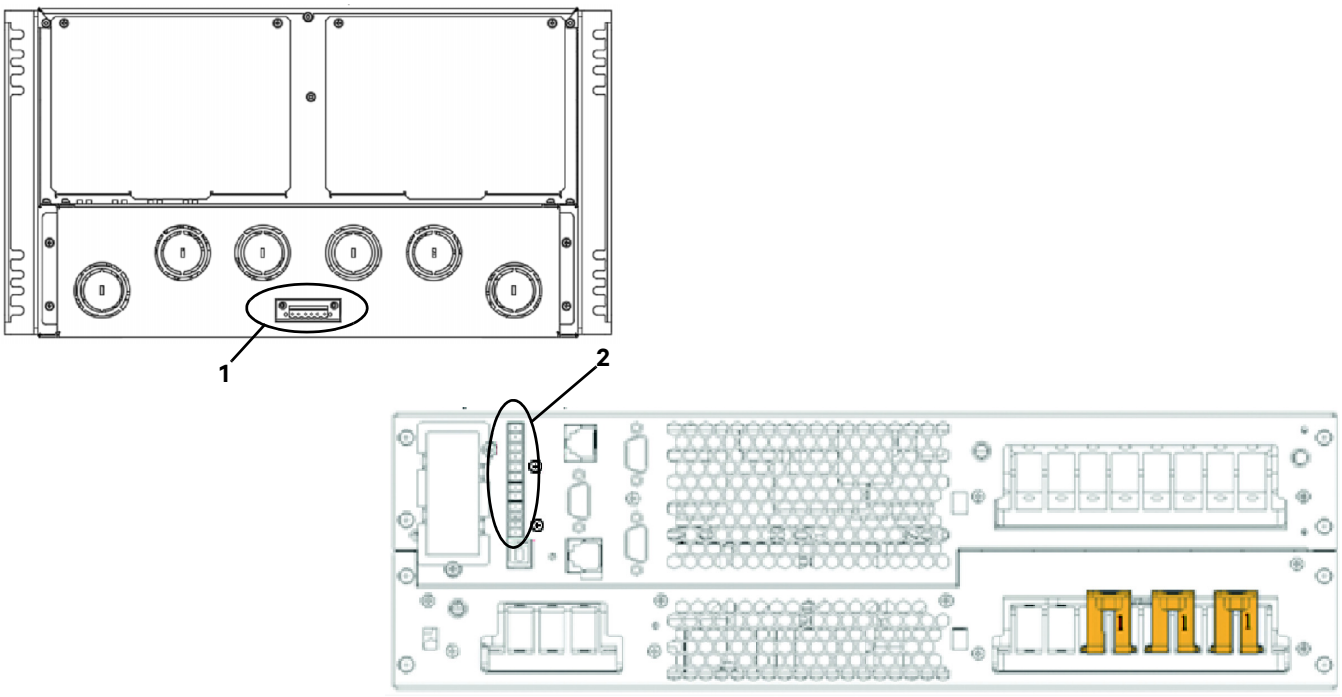
*All the copper jumper bars relating to the procedures above are accessories.*

## 2.5 Connect the Communication Cables

The signal cables are intended for connecting between Liebert ITA2 MBC dry contact ports and UPS dry contact ports. One end of the signal cable is a terminal of six-pin, and the other end is two-pin.

1. Insert the 6-pin connector to the Liebert ITA2 MBC dry contact port.
2. Insert the three two-pin connectors into the UPS dry contact ports (1, 2, 3) based on cable label. As shown in **Figure 18**.

**Figure 18 Dry contact ports on Liebert ITA2 MBC and UPS**




1. Liebert ITA2 MBC Dry Contact port
   For 6-Pin Connector
2. Liebert ITA2 UPS Dry Contact Port, 1-4

# 3.0 POD ASSEMBLY

The power output distribution unit (POD) is an option that may be installed on the Liebert ITA2 MBC to provide integral power distribution.

**Table 5 POD specifications**

| Item | Model | | |
|---|---|---|---|
| | **PD3-001** | **PD3-002** | **PD3-003** |
| Dimensions, WxH, in. (mm) | 7.4x5.7 (188x145) | 7.4x5.7 (188x145) | 7.4x5.7 (188x145) |
| Weight | | | |
| Net, lb. (kg) | 4.1 (1.86) | 7.2 (3.28) | 6.1 (2.78) |
| Shipping, lb. (kg) | 7.3 (3.32) | 10.4 (4.74) | 9.3 (4.24) |
| Electrical Specifications | | | |
| Rated Current, A | 30A, 3P breaker | 30A, 2P breaker | 30A, 1P breaker |
| Outlets | L21-30R (Number: 2) | L6-30R (Number: 6) | L5-30R (Number: 6) |

## 3.1 Installing the POD

### WARNING

Risk of electric shock. Can cause injury or death.

Failure to shutdown the Liebert ITA2 and to isolate the system electrically means that the system will contain deadly high voltage within the unit and at its output terminals.

The Liebert ITA2 must be shut down and all local and remote electric input power must be disconnected before any work may be done on or in the UPS and MBC. This includes the addition, removal or alteration of a power distribution box.

### NOTICE

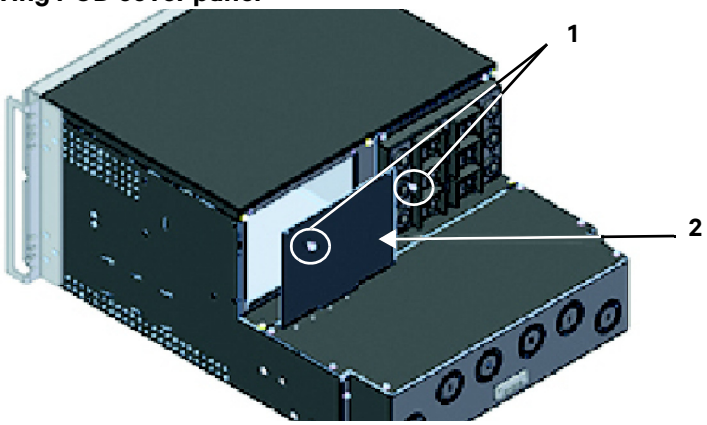
Risk of improper shutdown. Can cause damage to connected equipment.

Shutting down the UPS system will result in loss of input power to the connected load. Before beginning, shut down the connected equipment or transfer them to an alternate input power supply. Refer to **4.2 - Shutdown** for details about shutting down the Liebert ITA2 UPS.

To install the POD:

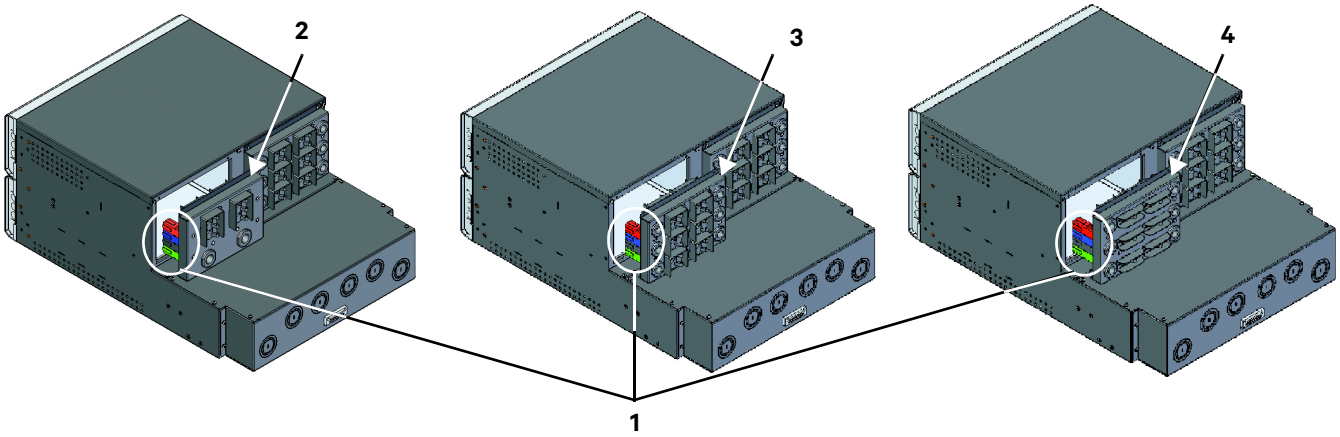
1. Remove the screws attaching the POD port cover panel and retain them for reassembly; see **Figure 19**.
2. Remove the POD port cover and set aside.
3. Align the POD connectors with those inside the POD port, making sure the colors match; see **Figure 20**..

**Figure 19 Removing POD cover panel**




1. Screws securing POD Cover Panel
2. Liebert ITA2 POD Cover Panel

**Figure 20 Connecting PP75 terminals**



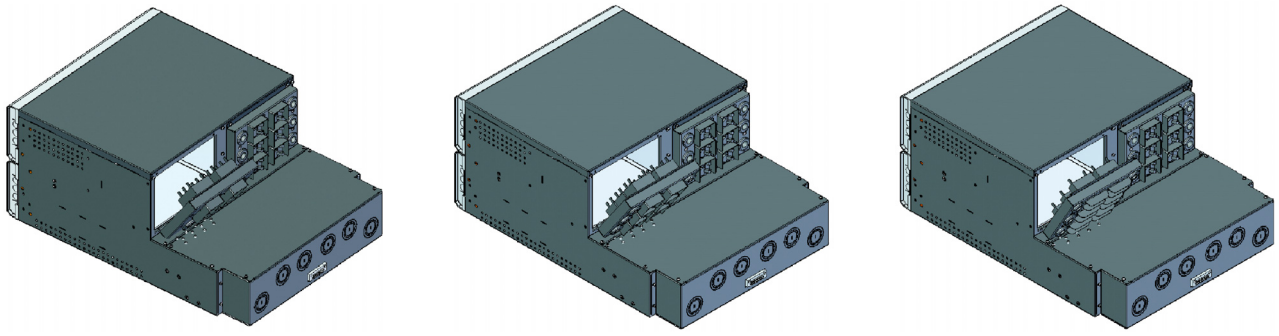

1. PP75 Connectors on POD
2. PD103-001
3. PD103-002
4. PD103-003

**NOTE**

*The color of the PP75 terminals on both the POD and the Liebert ITA2 MBC must match exactly.*

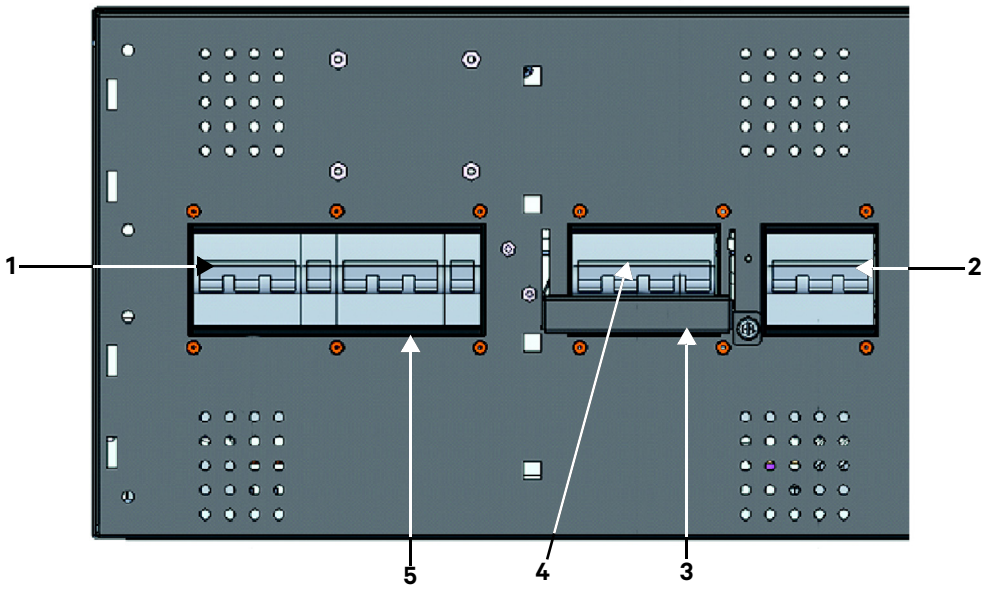
4. Verify that the connectors are fully seated.
5. Tilt the top of the POD and insert the lower edge into the slot of the POD port on the Liebert ITA2 MBC.
6. Press the top of the POD toward the enclosure and press it into place. See **Figure 21**.
7. Attach the POD with the screws removed in **Step 1**.

**Figure 21 Angle the POD for installation**



# 4.0 OPERATING THE LIEBERT ITA2 MBC

**Figure 22 Front panel of Liebert ITA2 MBC**




1. Rectifier Input Breaker
2. Maintenance Isolation Breaker
3. Maintenance Bypass Breaker Interlock
4. Maintenance Bypass Breaker
5. Bypass Isolation Breaker

Labels on UPS not shown.

## 4.1 Startup

1. If the two plastic bezel are attached to the Liebert ITA2 MBC, remove them by pulling both ends toward you with equal force.
2. Verify that the Maintenance Bypass Breaker on the front of the Liebert ITA2 MBC is Off (open) and that the breaker interlock is secured in place.
3. Close the feeder breakers in the external panel to provide main input and bypass input (for dual input system).
4. On the front of the Liebert ITA2 MBC, close the rectifier input breaker, bypass isolation breaker and maintenance isolation breaker.
5. If any optional POD's are installed, verify that any distribution breakers on the POD's are closed.
6. Start the UPS according to procedures in the UPS user manual, SL-00030.
   The connected equipment should now be supplied protected power from the UPS.
7. Reinstall the two plastic bezels on the front of the Liebert ITA2 MBC.

## 4.2 Shutdown

### NOTICE

Risk of improper shutdown. Can cause damage to the connected equipment.
Shutting down the Liebert ITA2 will disconnect input power to the connected equipment. Before shutting down the UPS, prepare the connected equipment, either by transferring it to an alternate input power source or shutting it down.

If shutting down the Liebert ITA2 UPS is an emergency, either operate the REPO button, if installed, or remove the four-pin connector on the rear of the UPS for communication terminal block Pins 9-12.

To shut down the Liebert ITA2 UPS to take it out of service, follow the procedures in the UPS user manual. Once the UPS has been shutdown, remove the plastic bezel from the front of the MBC to reveal the circuit breakers. Open all circuit breakers to electrically isolate the UPS unit from input power.

## 4.3 Transfer UPS from Normal Mode to Maintenance Bypass Mode

1. Remove the two plastic bezels from the front of the Liebert ITA2 MBC by pulling both ends toward you with equal force.
2. Transfer the Liebert ITA2 UPS to internal bypass by following the procedures in the UPS user manual, SL-00030.
3. Loosen the thumb screw on the interlock on the Maintenance Bypass Breaker.
4. Slide the interlock up (rack-mount orientation) or to the side (tower orientation) and tighten the thumb screw to secure the interlock in place.

**NOTE**

*When the interlock is moved to unlock the maintenance bypass breaker, the UPS will transfer to internal bypass if it was not already done in **Step 2**. The connected equipment is now unprotected from power abnormalities.*

5. Close the Maintenance Bypass Breaker
6. Open the Rectifier Input Breaker, Bypass Isolation Breaker and Maintenance Isolation Breaker to electrically isolate the UPS module from AC power
7. Open all battery breakers on the rear of each battery cabinet to electrically isolate the UPS module from DC power.

The system is now in maintenance bypass mode to allow the UPS module to be safely serviced.

## 4.4 Transfer UPS from Maintenance Bypass Mode to Normal Mode

1. Ensure that the mechanical interlock is still secured in the unlocked position.
2. Close the Rectifier Input Breaker, Bypass Isolation Breaker and Maintenance Isolation Breaker on the front of the MBC.
3. The UPS will begin its startup procedure and operate in internal bypass mode. Verify that the UPS is operating in internal bypass mode before proceeding.

**NOTICE**

Risk of improper operation. Can cause damage to the connected load.
Failure to have the UPS operating on internal bypass and performing the next step will result in loss of all output power to the connected equipment.

4. Open the Maintenance Bypass Breaker
5. Loosen the thumb screw on the mechanical interlock and slide it down (rack orientation) or to the side (tower orientation) and secure it in place by tightening the thumb screw
6. Transfer the UPS from internal bypass to inverter power following the procedures in the UPS user manual, SL-00030.

The UPS is now in normal operation, and the connected equipment is supplied with protected power.

# 5.0 SPECIFICATIONS

**Table 6 Liebert ITA2 MBC specifications**

| Item | Liebert ITA2 MBC Model | |
|---|---|---|
| | 8kVA—ITA2-08kMBC40 | 10kVA—ITA-10kMBC40 |
| **Dimensions, W x D x H, in. (mm)** | | |
| Unpacked | 16.9 x 22.4x 10.3 (430 x 570x 261 ) | |
| Shipping | 26 x 30 x 13.7 (662 x 762 x 350) | |
| **Weight, lb. (kg)** | | |
| Net Weight | 39.7 (18.02) | |
| Shipping Weight | 59.5 (27) | |
| **Electrical Parameters** | | |
| Rating, A | 30 | 40 |
| Voltage | 208/120 or 220/127 VAC, 3 Phase 4W+G | |
| Connections | Hard Wired | |
| **Environmental Conditions** | | |
| Operating temperature, °F (°C) | 32-122° (0° ~ 50°) (0.7 will be derated at 122° [50°]) | |
| Relative Humidity | 5%RH ~ 95%RH, non-condensing | |
| Altitude, ft. (m) | ≤9840 (≤3000) | |
| Maximum Storage and Transportation Temperature, °F (°C) | 104 ~ 158 (40~70) | |
| **Agency/Standards** | ISTA Procedure 1A | |
| Safety Standards | UL 1778-5th Edition, CSA C22.2 No. 107.3-14 | |

**Table 7 Hazardous substances in 8kVA 208V and 10kVA 208V Liebert ITA2 MBC**

| Part | Hazardous Substances | | | | | |
|---|---|---|---|---|---|---|
| | Lead, Pb | Mercury, Hg | Cadmium, Cd | Hexavalent Chromium, Cr, VI | Polybrominated Biphenyl, PBB | Polybrominated diphenyl ethers, PBDE |
| Cables | X | ? | ? | ? | ? | ? |

This table is made following the regulation of SJ/T 11364.
? Means the content of the hazardous substances in all the average quality materials of the parts is within the limits specified in GB/T 26572
X: Means the content of the hazardous sustances in at least one of the average quality materials of the parts is outside the limits specified in GB/T 26572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