

Vertiv™ Liebert® APM2 UPS UL Modular EBC



Quick Installation Guide

IMPORTANT: Before installing, connecting to supply or operating your Vertiv™ Liebert® APM2 UPS, refer the Safety and Regulatory Statements sheet. For detailed installation, operation, maintenance, and troubleshooting information, visit the Liebert® APM2 UPS product page for the SL-71373 Vertiv™ Liebert® APM2 Modular EBC User Manual available at www.Vertiv.com or use the QR code.



Mechanical Installation

Vertiv™ Liebert® APM2 Modular EBC is designed to be compatible with 60 kVA 208 V/120 kVA 400/415/480 V UPS Frame.

Inspecting the Modular EBC

Inspect the Liebert® APM2 Modular EBC for damage. If you find any damage, document and photograph the damages and notify your local Vertiv representative.

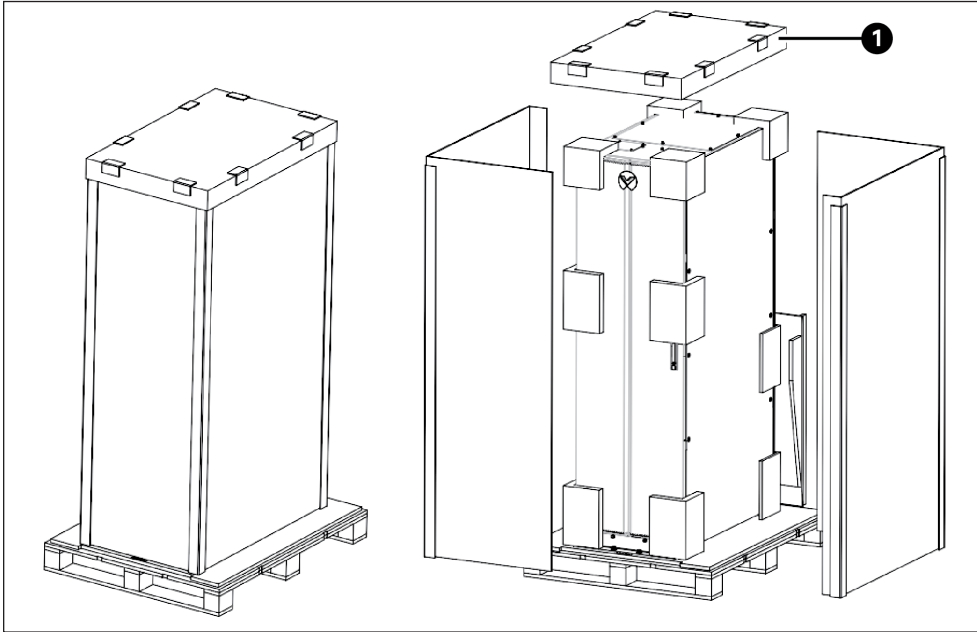
Choosing the Location

The Liebert® APM2 Modular EBC measures 23.6 in. x 34.13 in. x 78.8 in. (600 mm x 867 mm x 2000 mm). Install the Liebert® APM2 Modular EBC in a clean, well-ventilated environment with the ambient temperature range of 32 °F to 104 °F (0 °C to 40 °C). For installation and maintenance, minimum 3 ft. (914 mm) clearance is required in the front of the unit. For standard unit UPS configuration with top fans, rear clearance is not required.

If the following options are selected, the rear clearance is modified by the higher of the two values.

- **Seismic anchoring selection:** Up to 5 in. (127 mm) may be required in the rear of the Liebert® APM2 Modular EBC.

Figure 1. Removing the Packaging Material



Item	Description
1	Top cover

- **UPS front to rear airflow option configuration selection:**
At least 20 in. (500 mm) in the rear.

NOTE: For UPS front to rear airflow configuration to permit proper air flow and prevent overheating, do not block or cover the ventilation openings (perforated panels) or blow air down onto the unit.

Handling and Unpacking the Unit

The unit weighs up to 771.61 lbs (350 kg), depending on the options selected. The Vertiv™ Liebert® APM2 Modular EBC is shipped on a pallet and is equipped with casters that permit two or more people to roll it off the pallet for installation. Use a forklift or pallet jack to move the palletted Liebert® APM2 Modular EBC as close as possible to the installation location before removing packing material or loosening shipping brackets.

For removing packaging materials, follow the below procedure:

1. Remove the protective packaging, shown in Figure 1.

Locate the accessories package on top of the Liebert® APM2 Modular EBC and set aside.

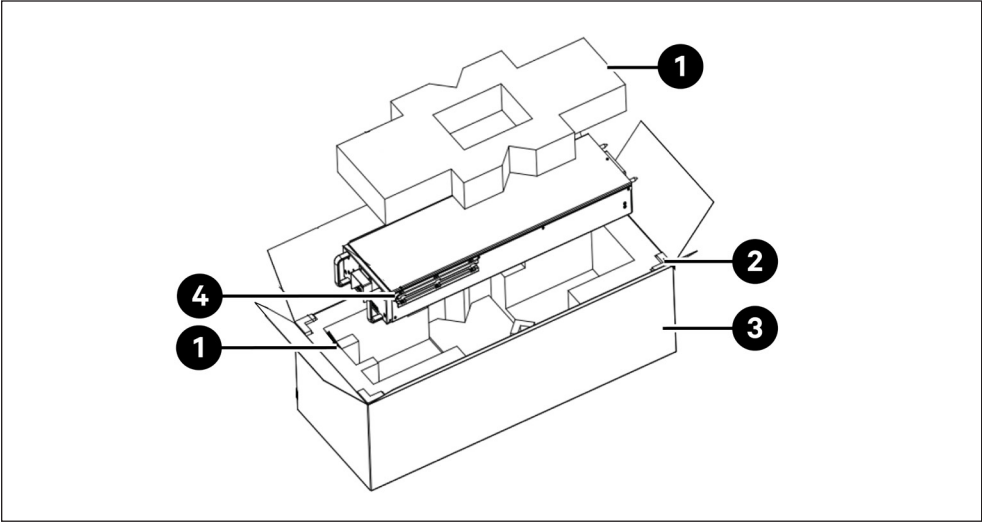
2. Use a 5/8 in. (16 mm) wrench or socket to remove the shipping brackets from the pallet.
3. Remove the shipping brackets from the front and rear of the Liebert® APM2 Modular EBC.
4. Ensure that the leveling feet are raised to prevent interference when rolling the unit on the casters.
5. Roll the unit down the ramp to the installation location then lower the leveling feet to fit the Liebert® APM2 Modular EBC at the installation location.

Unpacking of Battery Module

The installation steps of the built-in battery module are as follows:

1. Open the box and remove the plastic bag.
2. Remove the battery module from the case.

Figure 2. Unpacking of Battery Module



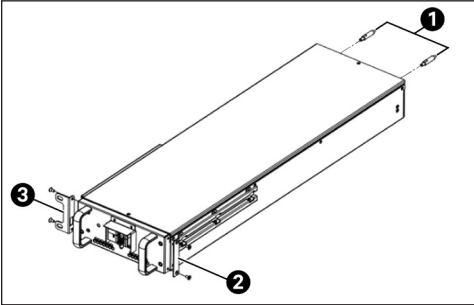
Item	Description	Item	Description
1	Foam packing	3	Cardboard box
2	Wooden corner	4	Battery module

3. Figure 2 shows the material inside the battery cabinets packing case.

NOTE: At least two peoples are required to disassemble and install the battery module. Pay attention to safety and avoid injury.

Preparing the Battery Module for Installing into the Cabinet

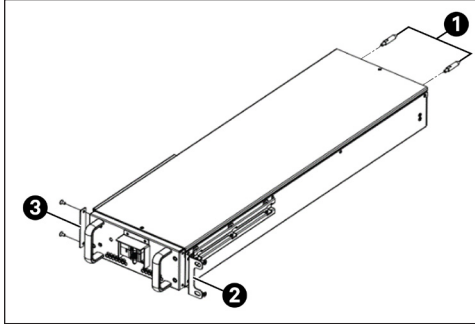
Figure 3. Battery Module—Left Side



Item	Description
1	Pin
2	L-shaped mounting ears
3	Baffle

1. If the module needs to be installed on the left side of the cabinet, secure the L-shaped mounting ears from the accessory bag to the left side of the module using two M4x8 screws. Fit the baffle from the accessory bag to the right side of the module using two M4x8 screws. Install the pin from the accessory bag to the back panel of the module, as shown in Figure 3.
2. If the module needs to be installed on the right side of the cabinet, secure the L-shaped mounting ears from the accessory bag to the right side of the module using two M4x8 screws. Fit the baffle from the accessory bag to the left side of the module using two M4x8 screws. Install the pin from the accessory bag to the back panel of the module, as shown in Figure 4.
3. Take out the module connector from the battery attachment and secure it using four M6x12 screws.

Figure 4. Battery Module—Right Side



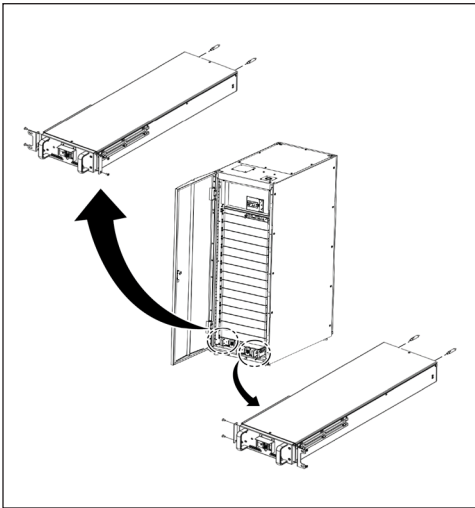
Item	Description
1	Pin
2	L-shaped mounting ears
3	Baffle

4. Install all the battery modules from bottom to top.

Installation of Battery Module in the Cabinet

1. Remove the module baffle installed..
2. Push the preinstalled module as shown in Figure 5 to the far left side of the cabinet. Secure it using two M6x12 screws from the accessory bag.
3. Push the preinstalled module as shown in Figure 5 to the far right side of the cabinet. Secure it using two M6x12 screws from the accessory bag.

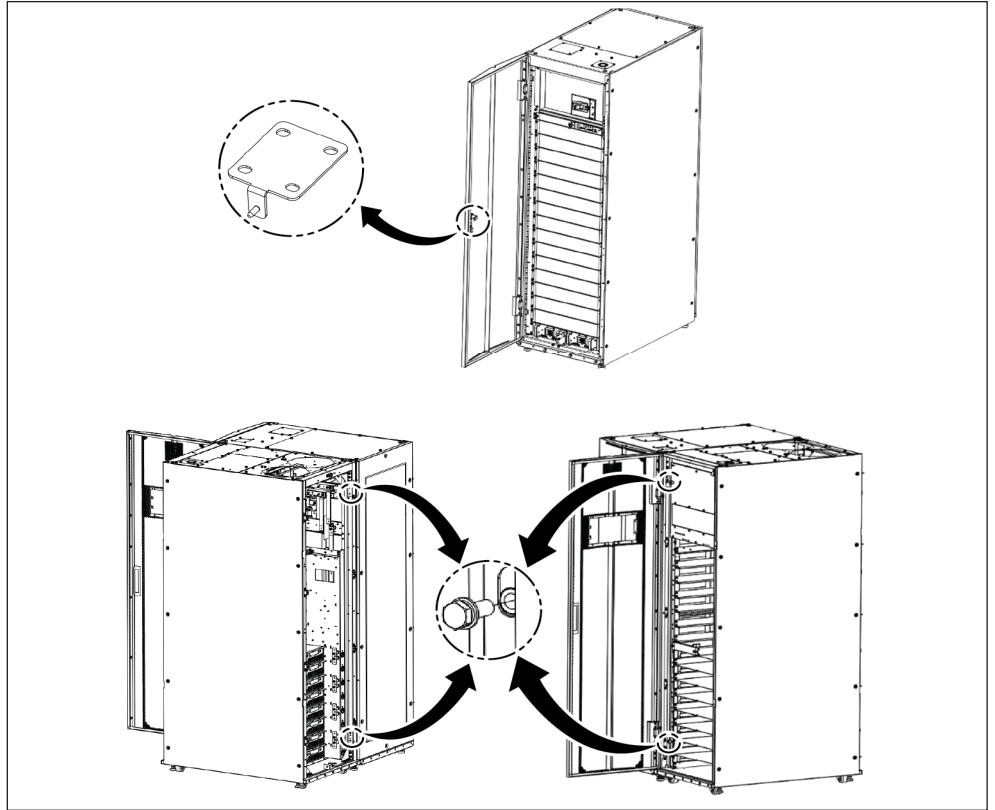
Figure 5. Battery Module—Left Side and Right Side



Step for Combination of Battery Cabinet and UPS Cabinet

1. Remove the right panel of the battery cabinet.
2. Remove the left panel of the UPS power cabinet.
3. After the battery cabinet and the UPS power cabinet are aligned, open the front panel of the UPS power cabinet. Secure the battery cabinet to the power cabinet at the top and bottom using two M10x30 screws, as shown in Figure 6.
4. Remove the rear panel of the UPS power cabinet, and secure the battery cabinet to the power cabinet at the top and bottom using two M10x30 screws.
5. Install the rear panel of the UPS power cabinet and close the front panel.

Figure 6. Battery Cabinet



Cables Connection of Vertiv™ Liebert® APM2 Modular EBC and Vertiv™ Liebert® APM2 10 to 120 kVA UPS

Cables from Liebert® APM2 Modular EBC to Liebert® APM2 UPS are as follows. See Figure 7 for more details.

1. Liebert® APM2 Modular EBC Battery Busbar (+, -) to Liebert® APM2 UPS Bat Busbar (+, -).
2. Liebert® APM2 Modular EBC Breaker MX (C1 and C2) to Liebert® APM2 UPS X7 Control Board (J3 pin 1 and J2 pin 3) respectively.
3. Liebert® APM2 Modular EBC BMS RS485 DB9 port to Liebert® APM2 UPS internal BMS RS485 DB9 port.

Figure 7. Cable Connection of Liebert® APM2 Modular EBC and Liebert® APM2 10 kVA to 120 kVA UPS

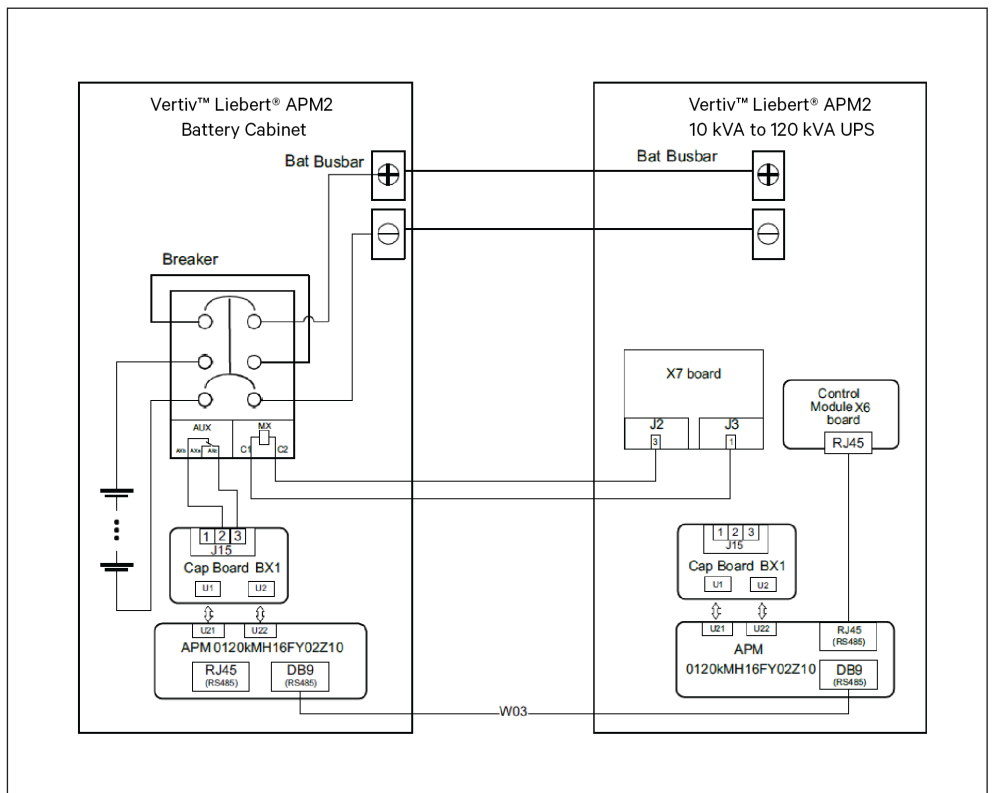


Table 1. Battery Voltage, Rated Voltage, and Float Voltage

Vertiv™ Liebert® APM2 Modular EBC			
Rated Voltage (VDC)	Number of Cells	Equalizing Charging Voltage (VDC)	Float Voltage (VDC)
192	96	225.6	217.9
384	192	451.2	435.8

Figure 8. Liebert® APM2 UL EBC Monitoring System

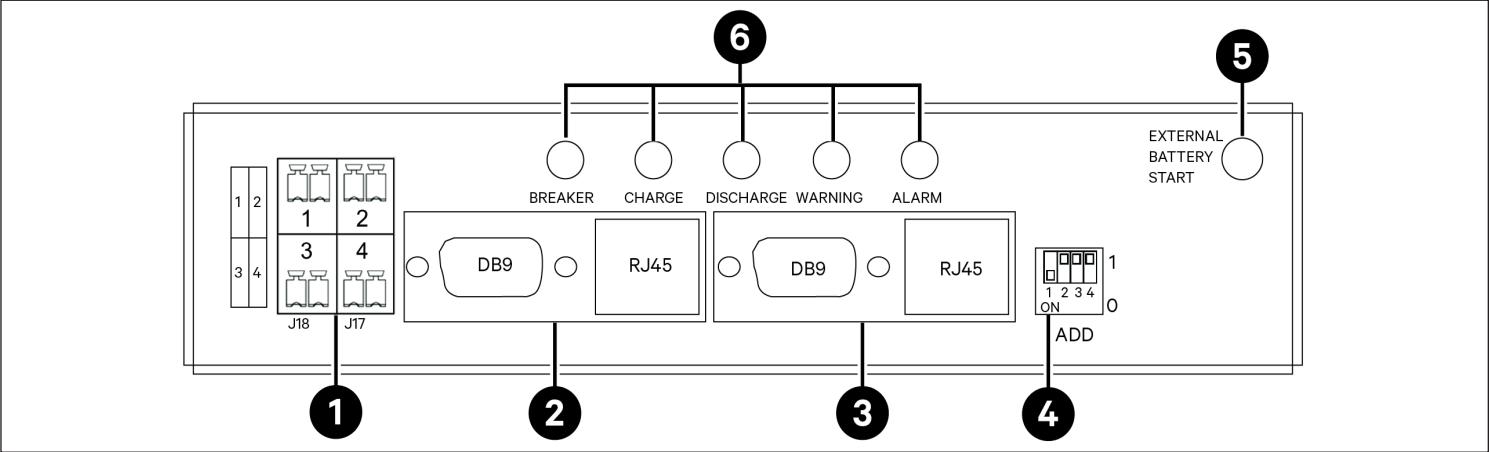
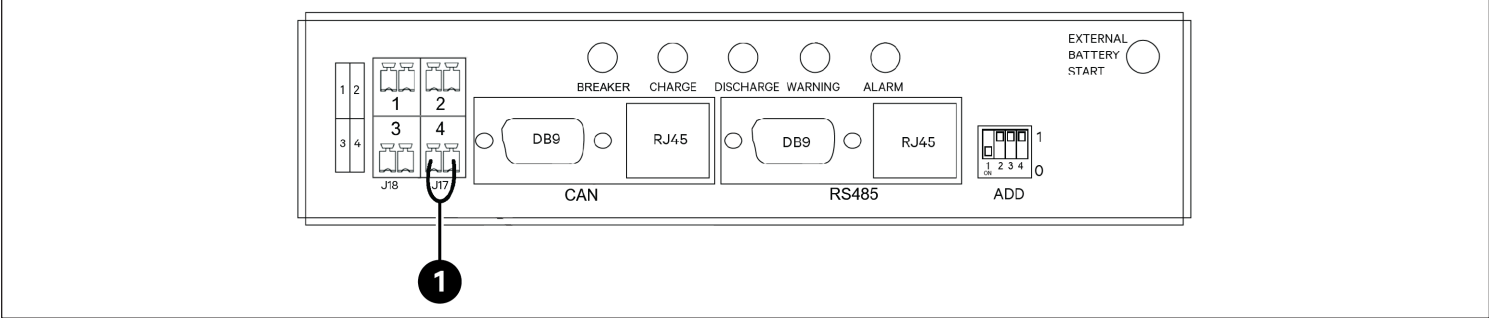


Table 2. Interface Definition

Number	Name	Function
1	Dry contact	There are four dry contacts. J17, port 4, Jumper required for BCB status to UPS. Other ports not used.
2	CAN communication	Reserve
3	RS485 communication	EBC communicates with UPS via RS485.
4	Dip switch	UPS identifies which EBC through this DIP switch number: (Liebert® APM2 Modular EBC: 0111)
5	External battery start button	Pressing this button is required to power on the BMS and communicate with the UPS.
6	BMS indicator light	Breaker: Steady on, Main BCB Closed. Blinking, Main BCB Open. Charge and discharge: Display function reserved. Warning: Lead-acid collection system abnormality. Alarm: Lead-acid collection system failure.

Figure 9. BMS BCB Status Jumper



Item	Description
1	Jumper installation position

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