VERTIV.

Liebert®

RXA™ Remote Distribution Cabinet

User Manual

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Names of companies and products are trademarks or registered trademarks of the respective companies. Any questions regarding usage of trademark names should be directed to the original manufacturer.

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.Vertiv.com/en-us/support/ for additional assistance.

TABLE OF CONTENTS

IMPORTANT SAFETY INSTRUCTIONS

Save These Instructions

This manual contains important instructions that should be followed during installation of the Liebert RXA. Read this manual thoroughly, paying special attention to the sections that apply to your installation, before installing or operating the Liebert RXA. Retain this manual for use by installing personnel.

Only properly trained and qualified personnel wearing appropriate safety headgear, gloves, shoes and glasses should be involved in installing the Liebert RXA or preparing the unit for installation.

In case of fire involving electrical equipment, use only carbon dioxide fire extinguishers or those approved for use in fighting electrical fires.

Extreme caution is required when performing installation and maintenance.

Special safety precautions are required for procedures involving handling, installation and maintenance of the Liebert RXA. Observe all safety precautions in this manual before handling or installing the unit. Observe all precautions in this manual before as well as during performance of all maintenance procedures.

WARNING! Risk of electric shock. May cause personal injury or death.
Verify that all incoming line voltage (power) circuits are de-energized and locked out before installing cables or making connections in the unit.
Equipment inspection and startup should be performed only by properly trained and qualified personnel wearing appropriate safety headgear, gloves and shoes. Lethal voltages are present during startup procedures. Electrical safety precautions must be followed throughout inspection and startup.
Only properly trained and qualified service personnel wearing appropriate safety headgear, gloves, shoes and glasses should perform maintenance on the Liebert RXA. All voltage sources to the unit must be disconnected before inspecting or cleaning within the cabinet.

WARNING! Risk of electric shock. May cause personal injury or death.
Lethal voltages exist within the equipment during operation. Observe all warnings and cautions in this manual. Failure to comply may result in serious injury or death. Obtain qualified service for this equipment as instructed. All power wiring should be installed by licensed electricians and must comply with IEC 60364 applicable parts and Nationals Wiring Codes.

WARNING! Risk of heavy unit falling or tipping over. Improper handling can cause equipment damage, injury or death.
The unit should NOT be loosened from the shipping pallet until after all handling by forklift or pallet jack is completed. Exercise extreme care when handling Liebert RXA cabinets to avoid equipment damage or injury to personnel.

Electromagnetic Compatibility

The Liebert RXA complies with the requirements of 2014/35/EU Low Voltage Directive, 2014/30/EU EMC Directive, and REACH/ROHS.

Operating this device in a residential area is likely to cause harmful interference that users must correct at their own expense.

Continued compliance requires installation in accordance with these instructions and use of accessories approved by Vertiv.

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1 INSTALLATION

NOTE: Read this entire manual before installing and operating the system. Upon receipt of a Liebert RXA, the installer should perform the following steps to ensure a top-quality installation.

1.1 Unpacking and Preliminary Inspection

A top-quality installation begins on the receiving dock.

- Inspect the shipment for damage or signs of mishandling before unpacking the unit(s).
- Check Shock-Watch™ indicator.
- Uncrate the unit carefully. Use care to avoid puncturing the container with sharp objects that would damage the contents.
- Remove the packing and inspect the equipment for any obvious shipping damage.

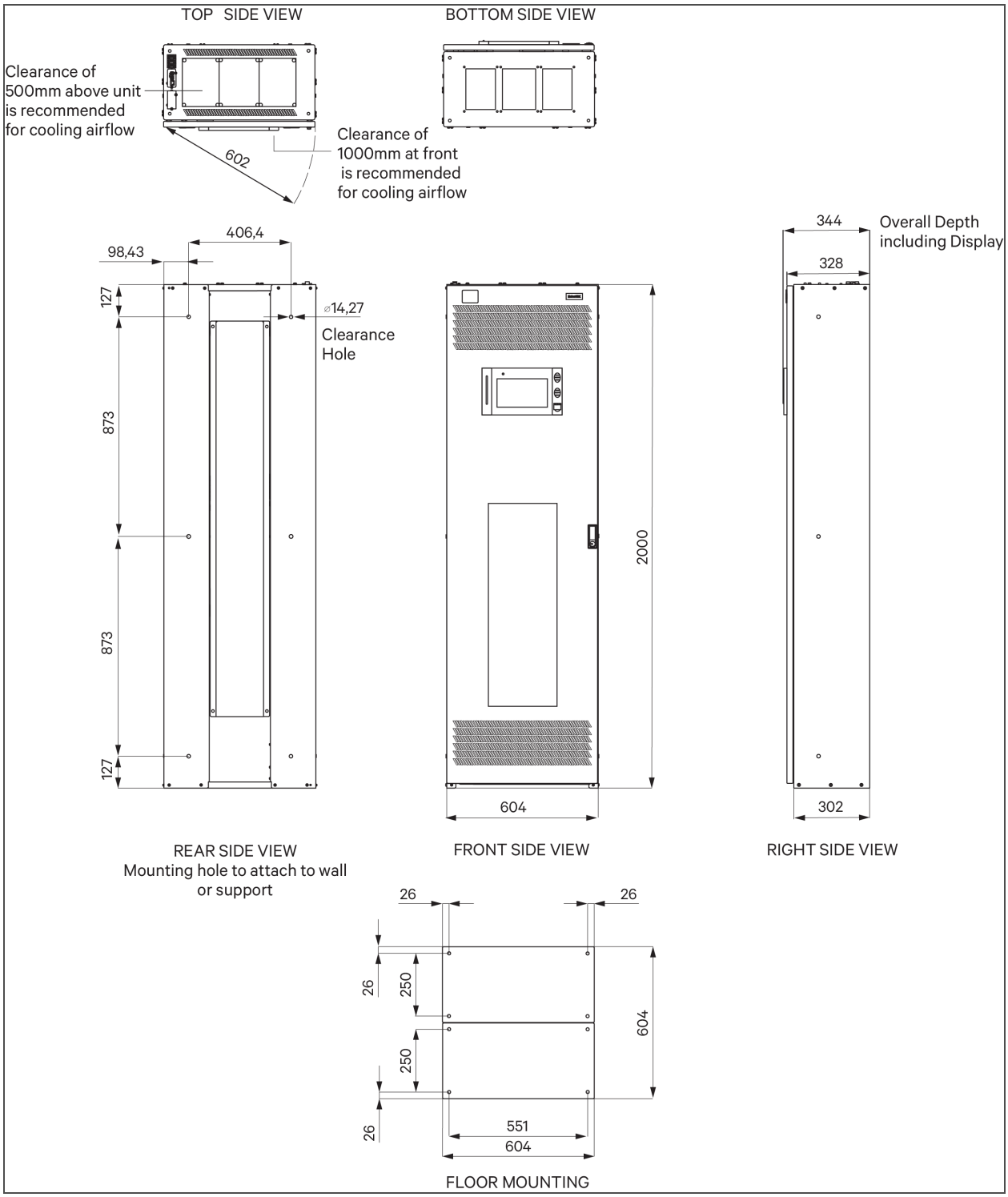
WARNING! Risk of heavy unit falling over. Improper handling can cause equipment damage, injury or death. The unit should NOT be loosened from the shipping pallet until after all handling by forklift or pallet jack is completed. Exercise extreme care when handling Liebert RXA cabinets to avoid equipment damage or injury to personnel.

1.2 Handling Considerations

The Liebert RXA is bolted to a wooden pallet to allow handling by a forklift, pallet jack or similar equipment.

- Check size and weight—Refer to the cabinet drawings furnished with the unit for size and weight information. Typical cabinet dimensions and weights are shown in Figure 1.1 on the next page.
- Plan the route—The route that the unit will follow to its installation area should be planned to ensure that all passages are large enough to accommodate the unit and that the floors are strong enough to support the weight. Check all doorways, hallways elevators, ramps and other portions of the route to determine if there are any obstructions and to ensure each is large enough and strong enough to allow easy passage.
- Move with care—The Liebert RXA should be moved to the installation area on the wooden pallet using forklift or pallet jack.
- If any damage is observed—Immediately file a damage claim with the shipping agency and inform the supplier of any damage or missing components within 8 days of the date of receipt.

Figure 1.1 Typical cabinet and floor planning dimension data



NOTE:

- Weight - 250A: 155 kg, 400A: 175 kg.
- Unit cannot be free-standing, it must be attached to a wall or other support with screws utilizing the mounting holes in the back and side of the unit (refer to **Figure 1.1** on the previous page).

The Liebert RXA can also be handled with a bridge crane (or equivalent equipment).

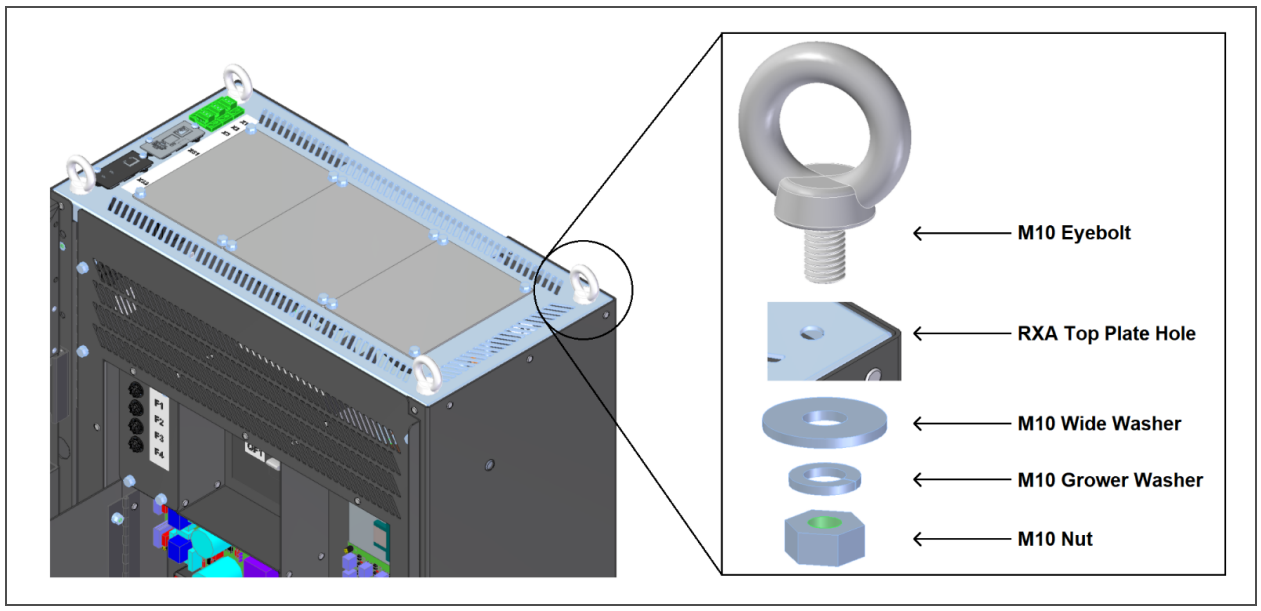
Before handling Liebert RXA with a crane or bridge crane make sure the following conditions are applied:

• Open the Liebert RXA front door and 2nd protection door

• Install into the pertinent top holes N° 4 x M10 lifting eyebolts with pertinent washers and nuts as per below picture with maximum weight lifted as established by EU Directive EN 2006/42/CE and Standard DIN 580.

NOTE: Eyebolts are not supplied by Vertiv.

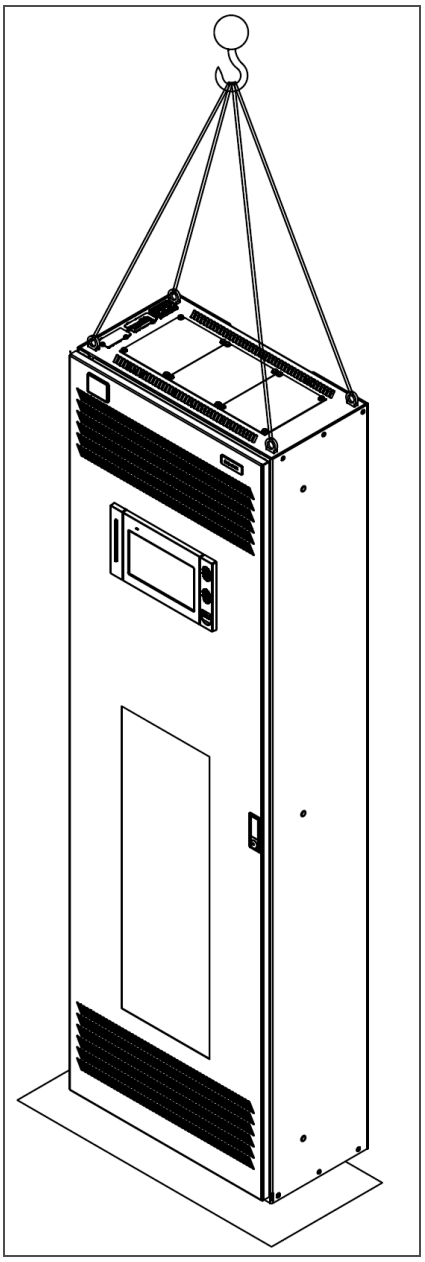
Figure 1.2 Install Eyebolts in Pertinent Top Holes



NOTE: Ensure the green connectivity terminals on the roof (see Figure 1.2 above) are not damaged during this activity

- Ensure the chain or ropes are in excellent condition.
- Ensure the angle between the lifting chains/ropes and the top of the Liebert RXA is ≥45°.

Figure 1.3 Example Handling with a Crane



1.3 Unit Preparation

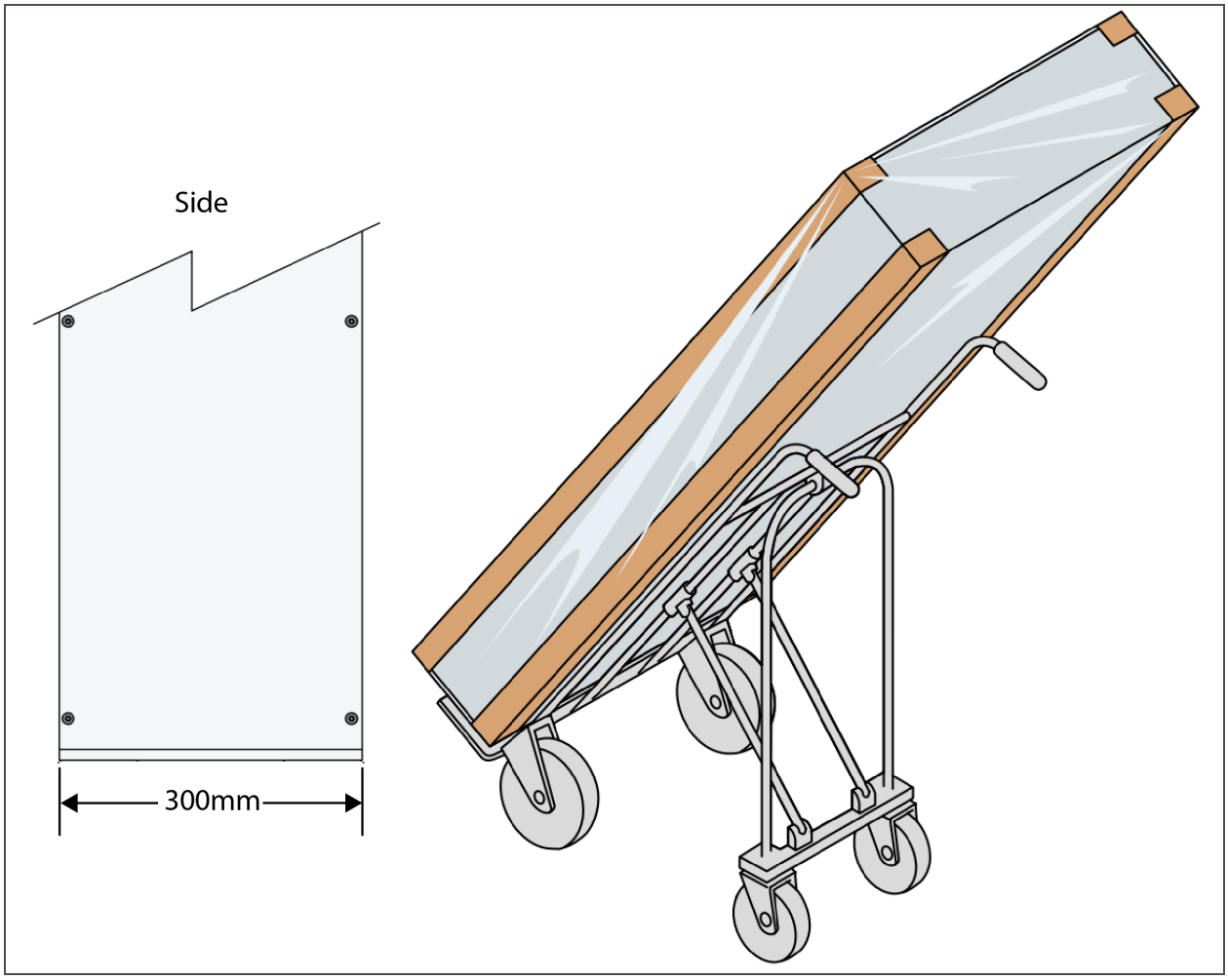
The Liebert RXA may be removed from the shipping pallet and installed by customer personnel. A typical procedure is as follows:

- Set the shipping pallet in a level area where there is enough room lift the Liebert RXA off the pallet onto the raised floor.
- Open the front door and second access door.
- Unbolt the unit from the shipping pallet. There is a bolt in each of the four bottom corners.

- The Liebert RXA is not equipped with bottom feet, use lifting device such as a hand truck (see Figure 1.4 below), or an appropriate number of personnel to lift the unit off the pallet and place it on the floor.

WARNING! Risk of heavy unit falling or tipping over. Can cause property damage, personal injury or death. A single Liebert RXA is not designed to be a free-standing unit and may present a tipping hazard. The Liebert RXA must be properly supported and braced until it is securely attached to a supporting structure.

Figure 1.4 Example Using a Hand Truck



NOTE: Before maneuvering the unit into its final position, read and follow all advisories in Location Considerations below

1.4 Location Considerations

The Liebert RXA should be installed in the data center and close to the load(s) it is supplying.

Equipment location should employ the shortest output distribution cable runs consistent with logical equipment arrangement and allowances for additional equipment.

The Liebert RXA should be installed in an environment with an ambient temperature range of 0 °C to 40 °C with a relative humidity of 0% to 95% (non-condensing).

Required clearance above the unit for cooling air flow is 500 mm; clearance below for cables is 305 mm minimum. Bottom clearance is required for exit of cables/conduits and for cooling airflow. This clearance is automatically provided by a raised floor with a minimum height of 305 mm. Cooling air intake is from the bottom front of the unit. Exhaust air output is from both the front panel top and top of the unit, refer to Figure 1.1 on page 8.

Recommended minimum service clearances are defined in Configurations for Installation below.

As with all electrical devices, the Liebert RXA produces heat under normal operation. The heat output is approximately 482 W (1,645 BTU/hr). This heat output should be included when calculating the environmental conditions of the room.

1.5 Configurations for Installation

The Liebert RXA can be installed in any of five configurations. Installation will vary depending on the chosen configuration.

- Configuration 1—Single unit
- Configuration 2—Two units attached back-to-back
- Configuration 3—Two units attached side-by-side
- Configuration 4—Three units: two attached back-to-back with the third attached to one side
- Configuration 5—Four units: two units attached back-to-back with one unit attached to each side

1.5.1 Configuration 1—Single Unit

This single-unit configuration is 603.26 mm wide and 344 mm deep. It must be secured to a wall, rack or other structure. The required front service access is 1000 mm.

WARNING! Risk of heavy unit falling or tipping over. Can cause property damage, personal injury or death. The Liebert RXA is not designed to be a free-standing unit in this configuration and may present a tipping hazard. The Liebert RXA must be properly supported until it is securely attached to a supporting structure.

1.5.2 Configuration 2—Back-to-Back

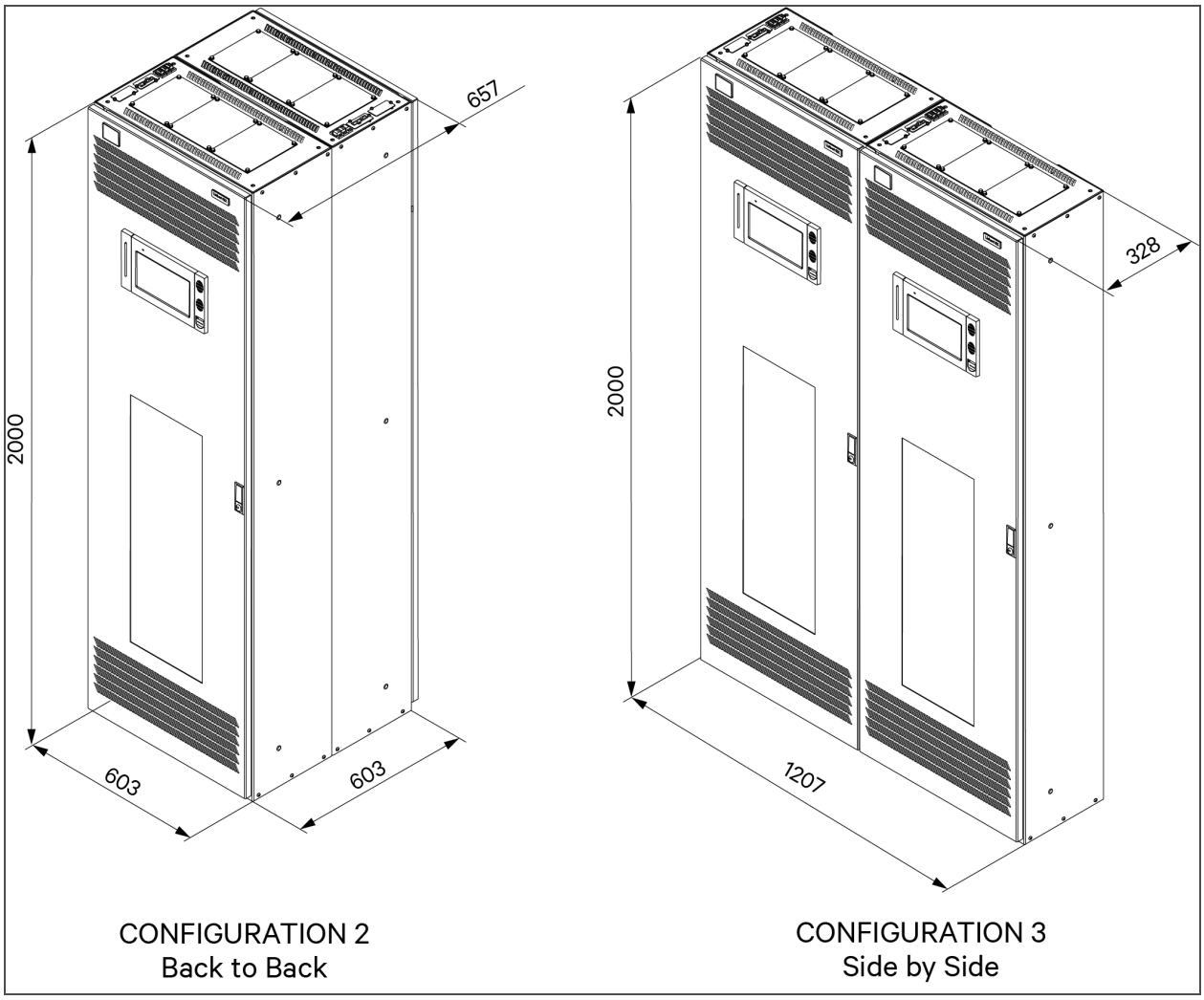
This two-unit configuration is attached back-to-back and is 603 mm wide and 603 mm deep. The two units can be can be installed in place of a floor tile. Remove one 610 mm x 610 mm floor tile and position the Liebert RXA over the opening, the unit will rest on top of the raised floor cross members on all four sides. Vertiv recommends securing the unit to a wall, rack or other structure. Refer to Figure 1.5 on the facing page.

1.5.3 Configuration 3—Side-By-Side

This two unit configuration is attached side-by-side and is 1207 mm wide and 328 mm deep. The units must be secured to a wall, rack or other structure. Refer to Figure 1.5 on the facing page.

WARNING! Risk of heavy unit falling or tipping over. Can cause property damage, injury or death. The Liebert RXA is not designed to be a free-standing unit in this configuration and may present a tipping hazard. The Liebert RXA must be properly supported until it is securely attached to a supporting structure.

Figure 1.5 Configuration 2 and Configuration 3—Two Liebert RXA Units



NOTE:

- Units are ordered and shipped separately. Units can be attached in the field as shown.
- Side-by-side units are not free-standing. They must be attached to a wall or other support. Mounting hardware supplied by others.
- Hardware to attach units to each other is factory-supplied.
- Shown with optional monitoring display.
- Configuration 2—Back-to-Back requires front and rear service access.
- Configuration 3—Side-By-Side requires front service access.
- Service access clearance dimensions: 1000 mm.
- Clearance above the unit for cooling air flow: 500 mm minimum.
- Clearance below for cables: 305 mm minimum.

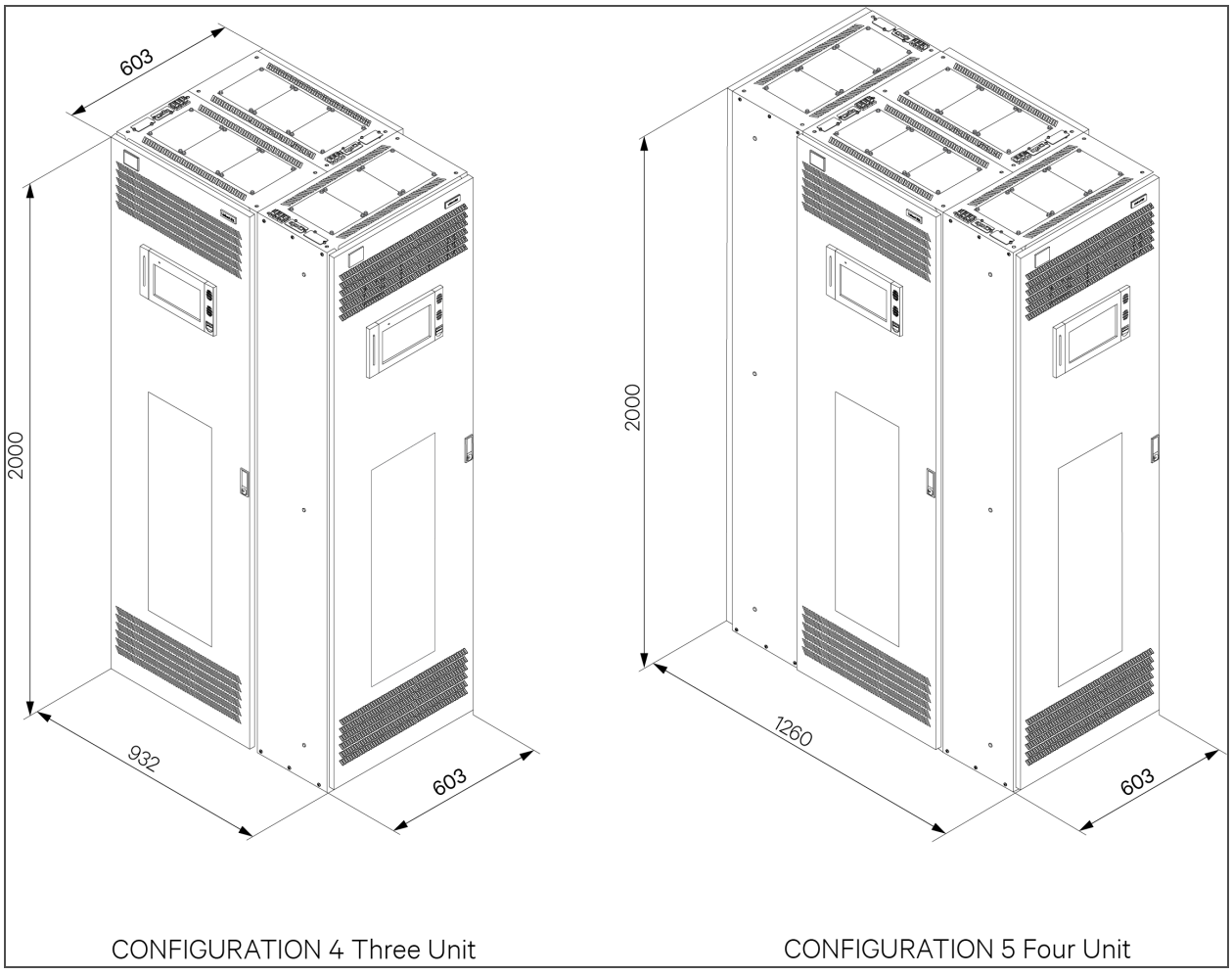
1.5.4 Configuration 4—Three Units

This three-unit configuration has two units attached back-to-back with a third unit attached to the side. It is 932 mm wide and 603 mm deep. These units are free-standing and can be set on a raised floor. Refer to Figure 1.6 below.

1.5.5 Configuration 5—Four Units

This four-unit configuration has two units attached back-to-back with one unit attached to each side. It is 1260 mm wide and 603 mm deep. These units are free-standing and can be set on a raised floor. Refer to Figure 1.6 below

Figure 1.6 Configuration 4—Three units and Configuration 5—Four Units



NOTE:

- Units are ordered and shipped separately. Units can be attached in the field as shown.
- Hardware to attach units to each other is factory-supplied.
- Shown with optional monitoring display.
- Configuration 4—Three Units on the previous page requires front, rear and side services access.
- Configuration 5—Four Units on the previous page requires front, rear and both side service access.
- Service access clearance dimensions: 1000 mm.
- Clearance above the unit for cooling air flow: 500 mm minimum.
- Clearance below for cables: 305 mm minimum.

1.6 Power Wiring

Power wiring should be installed by licensed electricians. All power wiring must comply with applicable local codes.

1.6.1 Input Power Connections

NOTE: Remove the Liebert RXA conduit plate prior to punching or drilling to prevent metallic debris from entering the unit.

WARNING! Risk of electric shock. Can cause personal injury or death.

Verify that all incoming line voltage (power) circuits are de-energized and locked out before installing cables or making connections in the unit. Before proceeding with installation, read all instructions, verify that all the parts are included and check the nameplate to be sure the voltage matches available utility power. Follow all local codes.

To minimize disturbances caused by other loads in the building, the power input to the unit should be supplied directly from a dedicated power source.

Input power cables must be sized following IEC 60634-5-52 + National Wiring Standard and any local building codes to ensure the feeder's ability to safely carry the system's full load current, including losses.

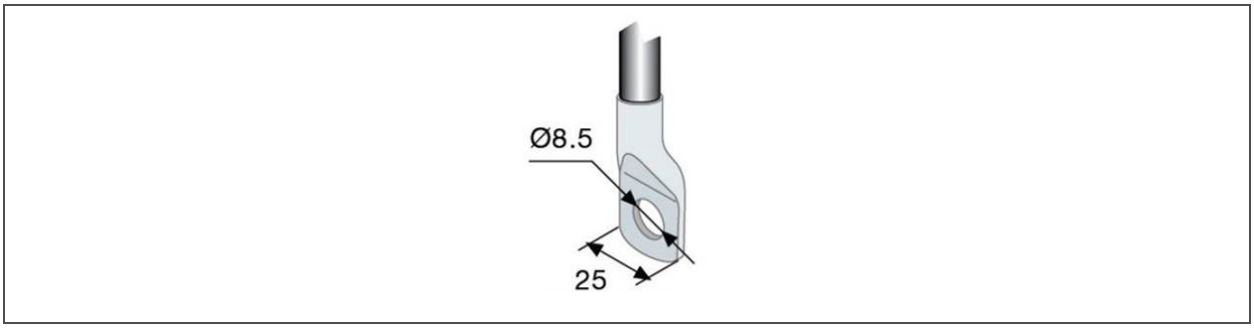
Input feeder conductors should be sized for no more than 2% voltage drop. If operation at under-voltage conditions for extended periods of time is desired, the input feeders must be oversized.

Input Neutral and Ground cables must be sized following IEC 60634-5-54. The main input feeder must consist of 3-phase conductors, one neutral and one (safety) ground conductor (4W + G).

To install input power cabling to the Liebert RXA unit follow the steps below. Refer to Figure 1.10 on page 18.

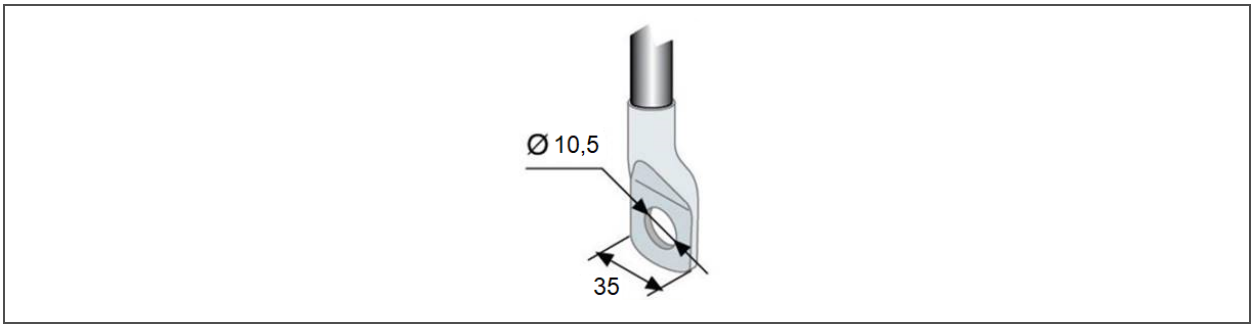
1. Unscrew the top and/or bottom metallic gland plate, drill to match the size and number of the input cables.
2. Cut the wire ties and remove the CTs.
3. Run the input phases, ground and neutral cables through the CTs and secure to the cable with non-conductive wire ties.
4. Connect the input cables to the main input breaker order following the phase labels on the cover:
   - Liebert RXA 250A: 2x50 mm2 wires with M8 lugs (max width 25 mm, refer to RXA 250A Cable and Lug Dimensions on the next page)
   - Liebert RXA 400A: 1x240 mm2 wires with M10 lugs (max width 35 mm, refer to RXA 400A Cable and Lug Dimensions on the next page). Input lugs are not supplied with the Liebert RXA.
5. Torque the bolts on the input breaker according to the breaker manufacturer's instructions.

Figure 1.7 RXA 250A Cable and Lug Dimensions



Cable lugs	
Tightening torque (Nm)	8
Clamping screw	M8

Figure 1.8 RXA 400A Cable and Lug Dimensions



Cable lugs	
Tightening torque (Nm)	28
Clamping screw	M10

If using lugs larger than 25 mm for the 250A or larger than 35 mm for the 400A a custom termination solution is available on request.

Follow the steps below to install input power cabling in RXA 250 with Bottom Cable Entry:

1. Open the Bottom second Access Door.
2. Unscrew the bottom aluminum gland plate, drill to match the size and number of the input cables.
3. Remove the bottom terminal covers and connect the input cables to the terminals (tightening torque: max 20 Nm) as per stickers indications (see Figure 1.9 on the facing page).
4. Replace the bottom terminal covers.

Figure 1.9 Location of Terminals

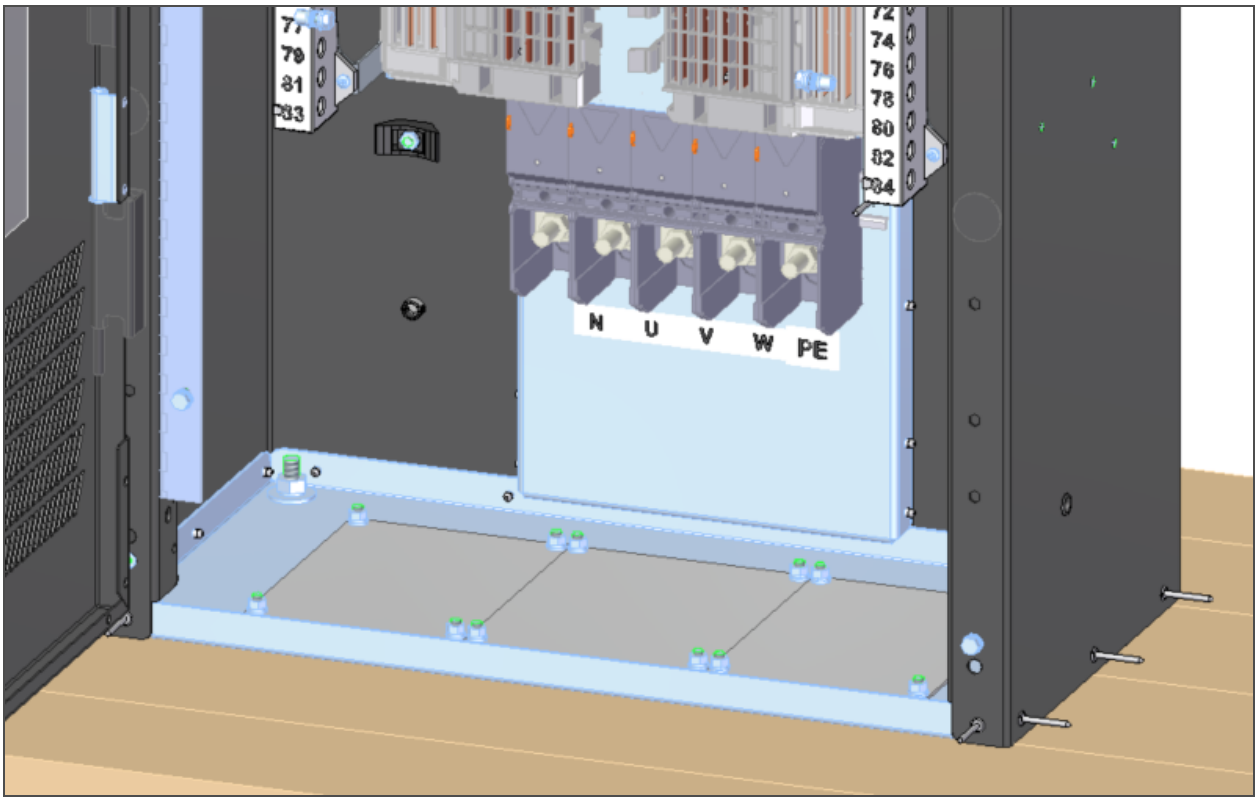


Figure 1.10 Input Electrical Field Connection Location for Units With Main Panel-board Breaker (with optional monitoring hardware)

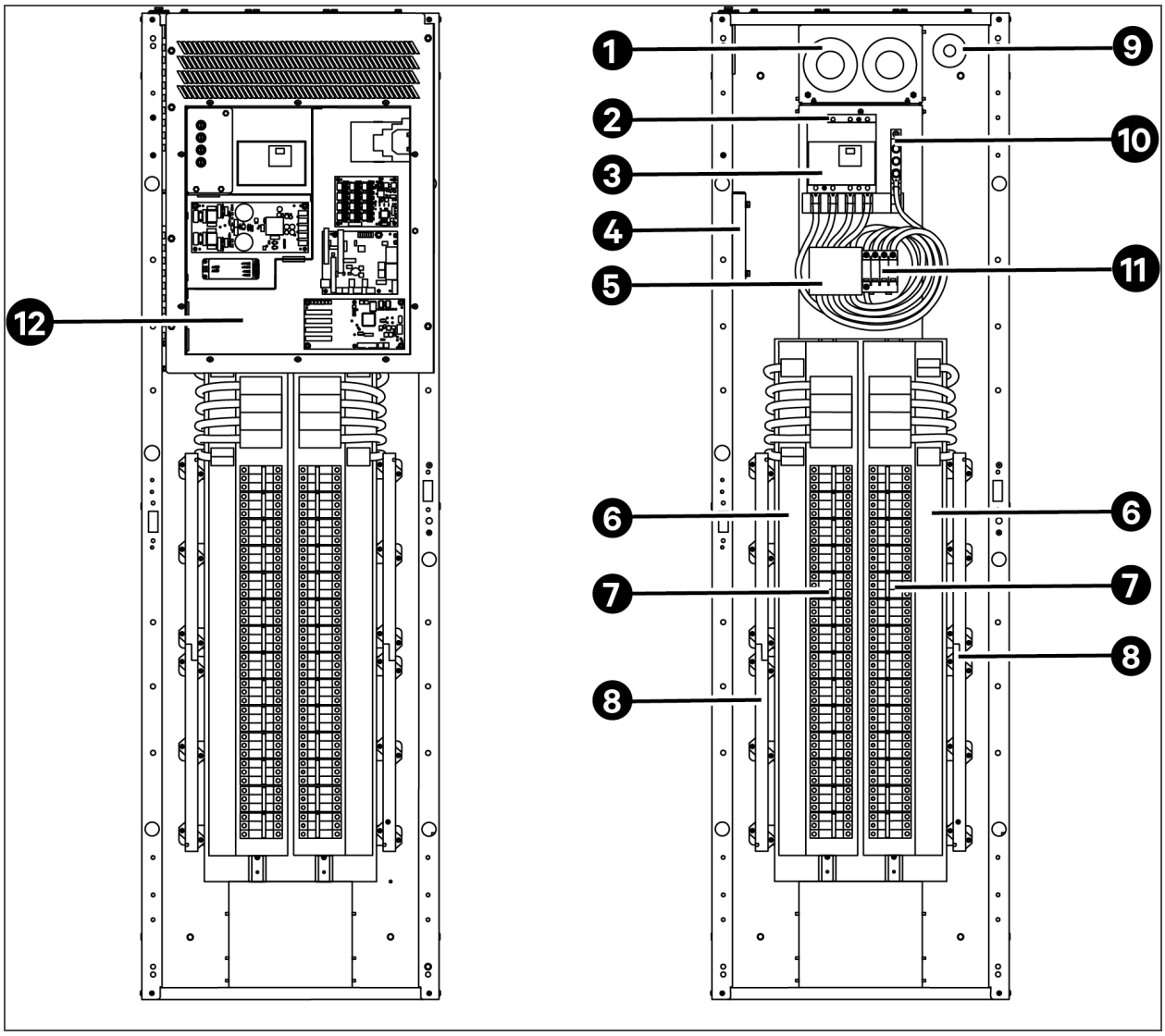


Table 1.1 Input Electrical Field Connection Location With Main Panel-board Breaker (with optional monitoring hardware) Descriptions

Number	Description
1	Input CTs
2	Input Phase and Neutral Connection
3	Main Input Circuit Breaker
4	Segregated AP2 Board
5	TVSS Fuses (optional)
6	42 Poles Distibution Panelboard (PE + N)
7	42 Poles Distibution Panelboard (PE + N)
8	2 x 2 100A CTs
9	Input Ground CT
10	Input Ground Connection
11	TVSS/OVR Surge Protective Device (optional)
12	DPM Monitoring Box

Figure 1.11 Input Electrical Field Connection Location for Units With Main Panel-board Breaker (without optional monitoring hardware)

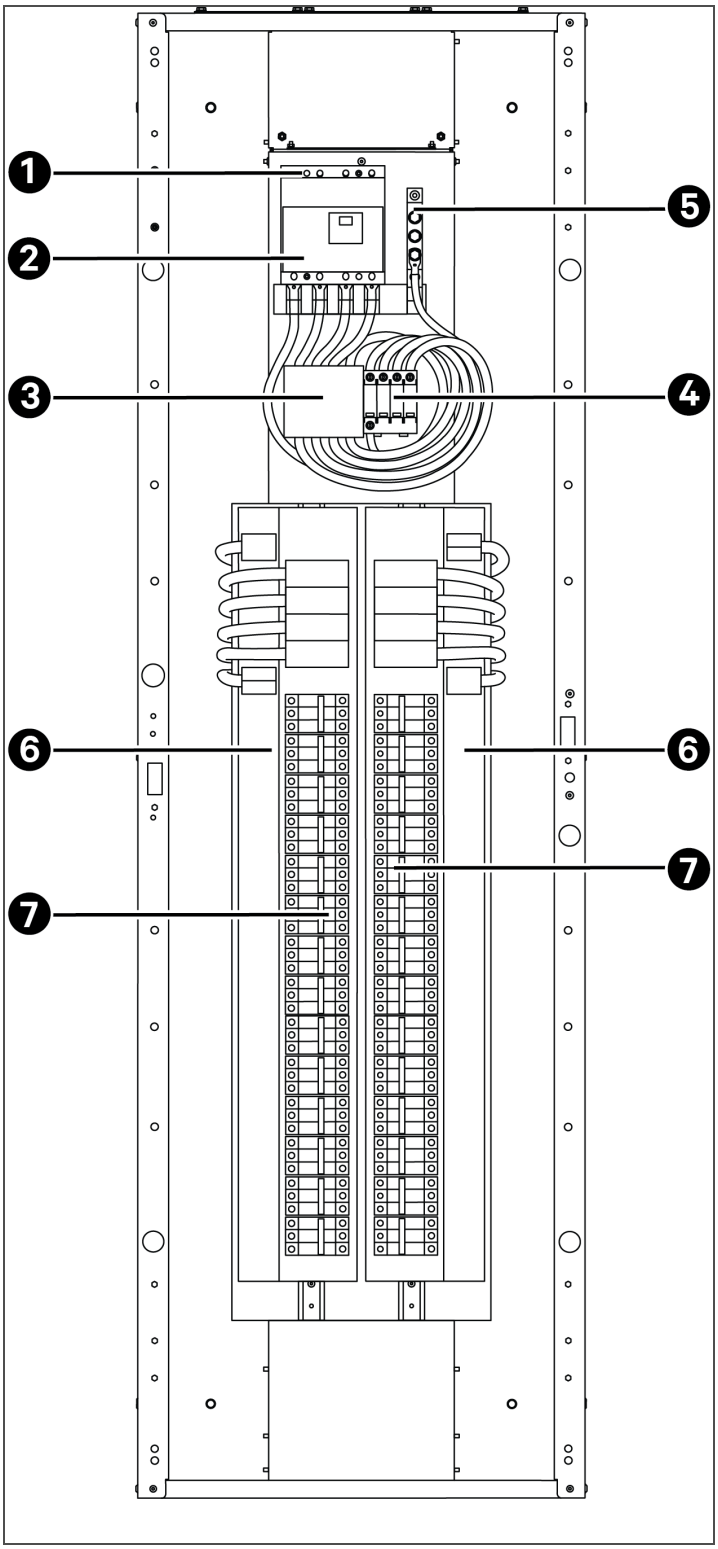


Table 1.2 Input Electrical Field Connection Location for Units With Main Panel-board Breaker (without optional monitoring hardware)

Number	Description
1	Input Phase and Neutral Connection
2	Main Input Circuit Breaker
3	TVSS Fuses (optional)
4	TVSS/OVR Surge Protective Device (optional)
5	Input Ground Connection
6	42 Poles Distibution Panelboard (PE + N)
7	42 Poles Distibution Panelboard (PE + N)

1.6.2 Installation of Branch Circuit Breakers

Refer to below for installation of the branch circuit breakers (ABB S400).

NOTE: Refer to the breaker manufacturer's breaker spacing and loading limitations prior to installation of branch circuit breakers. Failure to follow the breaker manufacturer's guidelines may impact unit operation, resulting in overheating and/or nuisance tripping of branch breakers.

Installation of the Branch Circuit Breakers (ABB S400)

Figure 1.12 Assembly of a SMISSLINE TP Device

For detailed information please contact ABB or download the specific instruction manual for SMISSLINE TP on the ABB homepage.

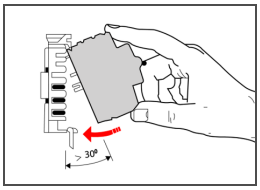


Figure 1.13 Plug-in Position of the Fixing Clip

Devices shall only be installed if the cabinet is at the installation site. Otherwise the busbar can be damaged due to the heavy weight of the MCBs and the vertical installation.

Installation of SMISLINE TP devices:

- Ensure that each powerbus does not exceed 250 A rated current referring to the consumption of the servers.
  - Load connection of SMISSLINE TP devices according to **Figure 1.12** above
- To ensure that the devices are connected properly, check the position of the fixing clip of each MCB.
- The fixing clip shall be in the upper position as in **Figure 1.13** above.

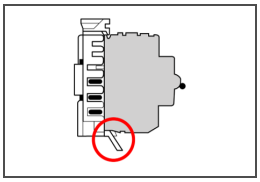
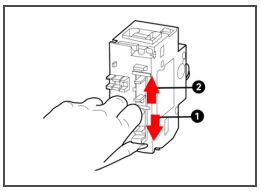


Figure 1.14 Position of the Plug-in Connector

Position of the plug-in connector:



- First: Lift contact gate, see **Figure 1.14** above.
- Second: Bring the plug contacts to the required position (L1, L2, or L3), see **Figure 1.14** above.

1.7 Output Power Connections

An output panelboard with ground and neutral provisions is provided inside the unit for connecting load(s) as required.

Flexible output distribution cables are used in data processing areas under a raised floor. Cable lengths and layout should be well planned:

- Cable routes should follow aisles between equipment. This will facilitate access to cables for installation, routine inspection and future changes.
- Determine the required cable length by measuring the distance to the load equipment following right- angle paths, rather than diagonally or directly. Always measure to the extreme far side of the equipment with respect to the unit to insure adequate cable length.
- Prevent restriction of airflow under the raised floor by running the flexible conduits flat on the sub-floor, in parallel paths.
- Initial system output loading should be between 50% and 75% of rated capacity. This allows the addition of future loads without immediately investing in another Liebert RXA.

- Balancing of loads is good design practice on any 3-phase system.

WARNING! Risk of electric shock. Can cause personal injury or death.
Verify that all incoming line voltage (power) circuits are de-energized and locked out before installing cables or making connections in the unit.
Before proceeding with installation, read all instructions, verify that all the parts are included and check the nameplate to be sure the voltage matches available utility power. Follow all local codes.

- All output cables and connections must comply with IEC 60634-5-52 (for power cables), IEC 60634-5-54 (for Neutral and PE), and Local Electric Codes.
- Refer to local laws concerning OSHA requirements.

1.8 DPM Monitoring

For units with DPM monitoring, refer to **Figure 1.15** below and the DPM user manual SL-11323 for operation instructions. For units without DPM monitoring, refer to **Figure 1.16** on page 26 for user connections.

Figure 1.15 Liebert DPM and IntelliSlot™ Location and Connection Details (optional monitoring hardware shown)

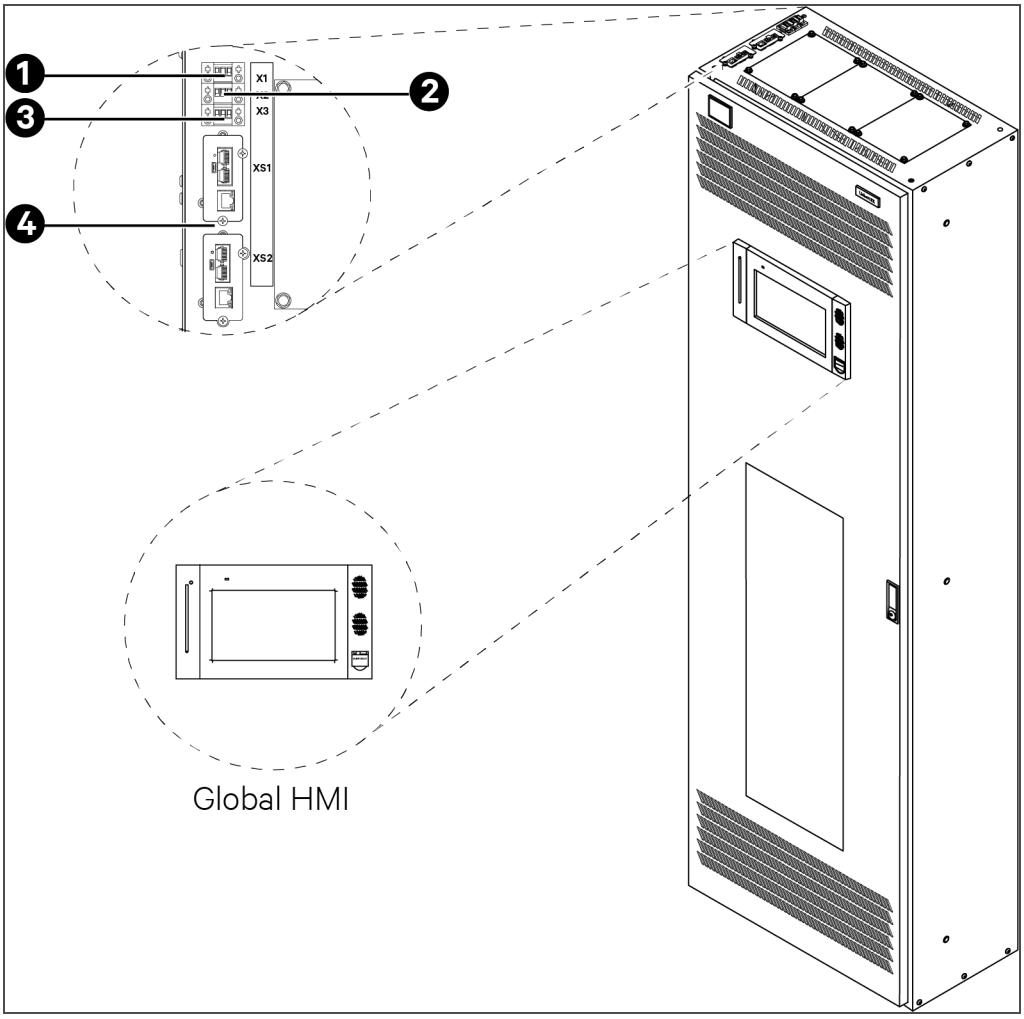


Table 1.3 Liebert DPM and IntelliSlot™ Location and Connection Details (optional monitoring hardware shown)

Descriptions

1	X1 Terminal: Summary Alarm • Pin 1: Com • Pin 2: NC • Pin 3: NO
2	X2 Terminal: Remote EPO with NC contact • Pin 1: EPO PWR* • Pin 2: EPO GND • Pin 3: EPO NC*
3	X3 Terminal: Repote EPO with *NO* contact • Pin 1: EPO PWR • Pin 2: EPO GND • Pin 3: EPO NO
4	2 x IntelliSlot
	*: Between X2 Pin 1 and Pin 3 there is a factory jumper needed if NC external EPO is not Installed in default EPO configuration.

Figure 1.16 Connectivity without Liebert DPM

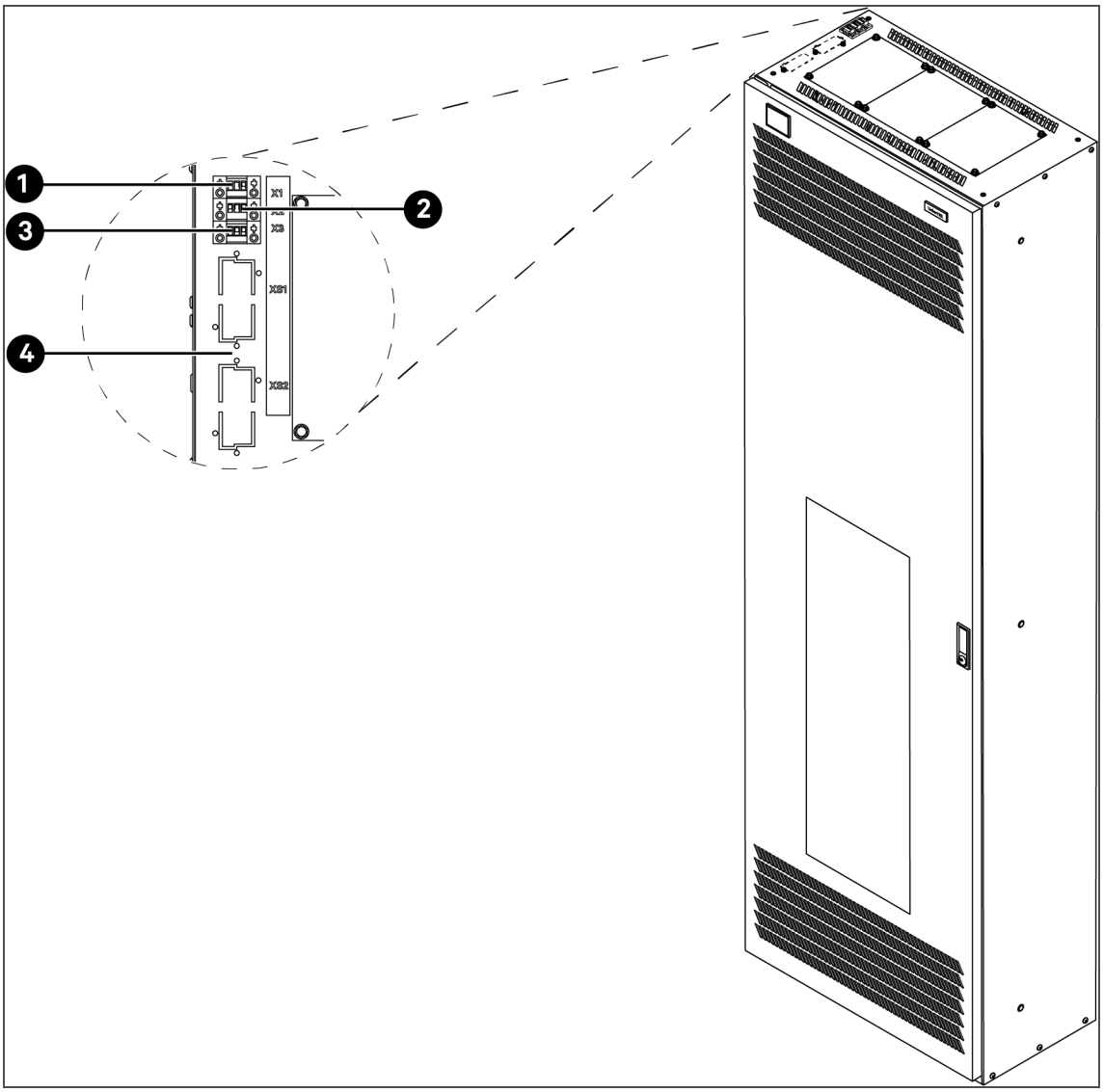


Table 1.4 Connectivity without Liebert DPM Descriptions

1	X1 Terminal: MICB Coil (for remote EPO) • Pin 1: +24 V • Pin 2: GND • Pin 3: N/A
2	X2 Terminal: MICB Status • Pin 1: COM • Pin 2: NO • Pin 3: NC
3	X3 Terminal: OVR/TVSS Status (optiona) • Pin 1: COM • Pin 2: NC • Pin 3: N/A

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2 EQUIPMENT INSPECTION AND STARTUP

2.1 Internal Inspection

A detailed internal inspection should be performed after the unit is in place and before it is energized, to ensure trouble-free startup. The same internal inspection should be carried out when performing preventive maintenance.

WARNING! Risk of electric shock. Can cause personal injury or death.
Verify that all incoming power circuits are de-energized and locked out before performing the internal inspection.

Gain access to the internal components of the Liebert RXA by opening the access panel. Inspect the wiring and components to be sure they are not damaged.

Check all power connections for tightness. Refer to Table 2.1 below for torque requirements of all electrical connections.

Follow the procedures described in Inspection and Startup Checklist on page 31 when performing a detailed inspection.

Table 2.1 Recommended torque values

Thread	Tightening Torque
M3	0,8 Nm
M4	1.8 Nm
M5	3.0 Nm
M6	6.0 Nm
M8	17.0 Nm
M10	40.0 Nm
M12	50.0 Nm
M16	115.0 Nm

2.2 Startup

Follow the detailed step-by-step checklist in Inspection and Startup Checklist on page 31 when installing and starting up the Liebert RXA.

A qualified electrician should be employed to perform the equipment inspection and startup. System startup may be arranged by calling your local Vertiv sales representative.

A copy of the appropriate checklist (furnished with the equipment) must be completed, signed, dated and returned to Vertiv. Warranty coverage of the equipment is not effective unless the Checklist is received by the factory.

WARNING! Risk of improper startup. Can cause equipment damage, personal injury and death. Hazardous voltages are present during startup procedures. Electrical safety precautions must be followed throughout inspection and startup.
Equipment inspection and startup should be performed only by properly trained and qualified personnel wearing appropriate safety headgear, gloves and shoes.

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3 INSPECTION AND STARTUP CHECKLIST

Unit Serial Number: _____

Unit Model Number: _____

Date: _____

3.1 Inspection

WARNING! Risk of electric shock. Can cause personal injury or death.
Lethal voltages are present during start up procedures. Electrical safety precautions must be followed throughout inspection and start up. Verify that all incoming power circuits are de-energized and locked out before performing any internal inspection.

Exterior Inspection

___ 1. Confirm that the exterior of unit is undamaged.

___ 2. Confirm that service and ventilation clearances are adequate. (See **1.5** on page 12).

Interior Inspection

___ 1. Open the second access panel.

___ 2. Inspect all wire and conductor insulation for damage.

___ 3. Check all breaker connections for tightness. Re-torque if necessary.

___ 4. Check trip settings of adjustable breakers.

___ 5. Check all terminal block connections for tightness. Re-torque if necessary.

___ 6. Remove any foreign objects from the components or the interior area of the unit.

___ 7. Check that the intake and exhaust air screens are clean and free of obstructions.

___ 8. Close the access panel, leaving access to circuit breakers for the following start up procedure.

3.2 Startup

WARNING! Risk of electric shock. Can cause personal injury or death.
Hazardous voltages are present in the equipment throughout the startup procedure. This unit has several circuits that are energized with high AC voltage.
Only properly trained and qualified personnel wearing appropriate safety headgear, gloves, shoes and glasses should be involved in starting this unit. When performing any procedure with any part of the equipment under power, personnel and test equipment should be standing on rubber mats.
In case of fire involving electrical equipment, use only carbon dioxide fire extinguishers or those approved for use in fighting electrical fires.
One person should never work alone, even if all power is disconnected from the equipment. A second person should be standing by to assist and to summon help in case of an accident.

___ 1. Make certain that all circuit breakers are in the Off position and that power to the unit is locked out.

___ 2. Verify proper input power connections to unit, including equipment grounding conductor.

___ 3. Turn On the building power to the unit. Check the phase rotation at the panelboard main breaker or panelboard input lugs if no panelboard main breaker is supplied. Phase rotation should be A, B, C, as indicated.

___ 4. Check and record the input voltages at the panelboard main breaker or panelboard input lugs if no panelboard main breaker is supplied:

	Input 1	Input 2	Input 3	Input 4
Volts, phase A to phase B	_____	_____	_____	_____
Volts, phase B to phase C	_____	_____	_____	_____
Volts, phase C to phase A	_____	_____	_____	_____

___ 5. Turn on the panelboard main breaker.

___ 6. Check the phase rotation at the panelboard. Phase rotation should be A, B, C, left to right.

___ 7. Check and record the input voltage at the panelboard. Measured voltages should correspond to the unit's nameplate input voltage.

	Panelboard			
Volts, phase A to phase B	_____	_____	_____	_____
Volts, phase B to phase C	_____	_____	_____	_____
Volts, phase C to phase A	_____	_____	_____	_____

If output voltage is incorrect, check for wiring errors or incorrect input voltage. Contact the local factory representative for assistance.

3.3 Monitoring System Check Out

If the unit is equipped with Current Plus Monitoring Liebert DPM:

1. Turn the unit On.
2. Ensure that the LCD is On. The Monitor Panel displays voltage and current for the panelboard (load must be applied to get an accurate reading).

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4 OPERATING INSTRUCTIONS

4.1 Startup Procedures

Before the unit is placed in service after initial installation, after equipment relocation or after equipment has been de-energized for an extended period of time, perform equipment inspection and startup procedures as detailed in Equipment Inspection and Startup on page 29 and in Inspection and Startup Checklist on page 31.

After initial system startup, the following guidelines can be used for standard equipment operation. These guidelines should be reviewed for any special equipment modifications, special site considerations or company policies that may require changes to the standard equipment operation.

4.2 Normal System Shutdown

To perform a normal system shutdown, perform an orderly load equipment shutdown according to the load equipment manufacturer's recommended shutdown sequence. The load equipment can be turned Off at each piece of load equipment or at the Vertiv panelboards (circuit breaker) located behind the unit's front door. Turn Off the unit panelboard main breaker. To remove all power from the unit, turn Off the building power to the unit.

4.3 Normal System Turn On

Make certain all unit circuit breakers are in the Off position. All unit circuit breakers are located behind the front door. Turn On building power to the unit. Turn On the panelboard main circuit breakers if supplied. If the circuit breaker has been tripped Off (instead of being turned Off), the circuit breaker handle must be moved to the Off position before being turned On. Individually turn On each panelboard circuit breaker following the load equipment manufacturer's startup sequence.

4.4 Liebert DPM

If the Liebert RXA is equipped with Liebert DPM, the monitoring unit is On whenever power is supplied to the unit.

For more information, refer to the Liebert DPM user manual (SL-11326).

The Liebert DPM display allows users to view monitoring information for the panelboard as well as each individual branch circuit breaker. Alarm data can be viewed from the local display for up-to-date breaker status.

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5 MAINTENANCE

5.1 Repair

Even the most reliable equipment may fail. Vertiv is at your service to assure fast repair of your unit and minimum down-time of your installation.

WARNING! Risk of electric shock. May cause personal injury or death.
Only properly trained and qualified service personnel wearing appropriate safety headgear, gloves, shoes and glasses should perform maintenance on the Liebert RXA. All voltage sources to the unit must be disconnected before inspecting or cleaning within the cabinet.

Standard electrical troubleshooting procedures may be used to isolate problems in the unit. If there are questions, don't hesitate to contact Vertiv.

Repair or replacement of standard items, such as circuit breakers and fuses can be either handled by qualified electricians or referred to Vertiv.

Repairs related to the monitoring system must be referred to Vertiv.

To contact Vertiv for information or repair service, call 0080011554499

5.2 Inspection and Cleaning

Air circulation through the cabinet may cause dust to accumulate on internal components. Cleaning should be done as necessary during electrical inspections.

Annual general system inspections, cleaning and operation checks are recommended to ensure system performance and long service life.

WARNING! Risk of electric shock. May cause personal injury or death.
Only properly trained and qualified service personnel wearing appropriate safety headgear, gloves, shoes and glasses should perform maintenance on the Liebert RXA. All voltage sources to the unit must be disconnected before inspecting or cleaning within the cabinet.

5.2.1 Inspection Schedule

It is difficult to establish a schedule for periodic cleaning because conditions vary from site to site. Inspections after the first 24 hours, after 30 days and after 6 months of operation should help determine a pattern for the inspection schedule.

Electrical connections and component mountings should be inspected after the first 24 hours, after 30 days and after 6 months of operation. Inspections should be conducted annually thereafter.

Ventilation openings and grilles should be inspected and cleaned every 6 months to one year.

A complete inspection and operational checkout should be performed annually. This is best done by performing the inspection and startup procedure as detailed in Inspection and Startup Checklist on page 31

Vertiv offers a complete range of preventive maintenance services. These include thorough equipment performance checks and calibration of electronics. Contact Vertiv for details.

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