

# SCOPE OF WORK

## POWER DISTRIBUTION SYSTEMS

### 3-PH BYPASS DISTRIBUTION CABINET

#### ESSENTIAL SERVICE - 1 PM

## SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Preventive Maintenance Service, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory trained and authorized technician. Vertiv is the OEM service provider for Liebert products.

## SERVICE PERFORMED

1. Perform a complete visual inspection of the equipment, checking for broken, damaged, or stressed components.
2. Conduct thermal scan on all connections, components and transformer terminals for evidence of overheating.
3. Conduct visual inspection of all connections, components and transformer for evidence of heat discoloration or burnt components.
4. (If permitted) Measure voltage and current on the input and output and verify values are within specification.
5. (If applicable) Verify the voltage and current readings match the displayed values. Calibrate if necessary.
6. Inspect all transformer, terminal block, circuit breaker(s), and bus bars for tightness.
7. Verify all optional component assemblies (ION6200, LDM, and VPMP) are seated and wiring connections are tight (if applicable).
8. Check continuity of all fuses.
9. Verify the top and bottom of the equipment is free of debris and the air ducts are clear.
10. Clean any foreign material and dust from equipment.
11. Verify that the system is installed and configured correctly.
12. Place system on Maintenance Bypass (if permitted) to ensure Interlock system (Kirk Key) is fully functional.
13. Check or perform Engineering Field Change Notices (FCN) as necessary.
14. Check that all interior and exterior protective panels and covers have been replaced and no holes or gaps are present.

## ASSUMPTIONS AND CLARIFICATIONS

Parts coverage excludes branch circuit breakers.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

- **Point of Contact:** Provide an authorized point of contact(s), specific for the scope of work, for scheduling and coordination purposes.
- **Scheduling:** Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- **Site Access:** Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- **Equipment Access:** Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- **Shutdown:** Service may require shutdown of load to ensure electrical connection integrity.
- **Notification:** If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

Subject to all Terms & Conditions as noted in the Vertiv Terms & Conditions or the terms of a Master Agreement between the parties, if any, shall apply.

# SCOPE OF WORK

## UNINTERRUPTIBLE POWER SYSTEMS

### ALL 3-PHASE MODELS

### ESSENTIAL SERVICE - 2 PM

## SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Annual and 1 Semi-Annual Preventive Maintenance Services, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory-trained and authorized technician equipped with Vertiv Proprietary tools and software. Vertiv CEs and Vertiv Partners are the only approved OEM service providers for Vertiv products.

## VERTIV PROPRIETARY SERVICE TOOLS AND SOFTWARE

Vertiv Customer Engineers (CEs) are the only authorized, factory- trained and OEM-supported service providers for Vertiv equipment with access to Vertiv's proprietary service tools and software to ensure optimal equipment performance.

- Using proprietary software PPvis™, Paramset™, and WinSVT™ CEs apply Vertiv's knowledge base to diagnose, configure and optimize your Vertiv equipment.
- Vertiv is the only authorized source for critical proprietary firmware updates providing your equipment the latest version of operational firmware to ensure equipment is running at optimal performance and efficiency levels.
- Vertiv exclusively enables:
  - Access to OEM engineering support and product enhancements.
  - Optimized methods of procedure for efficient service supported by proprietary documentation.
  - Improved MTBR and MTTR.
  - Root cause forensic analysis.
  - Continual improvements with tested and certified updates for software and hardware improvements throughout the equipment's lifecycle.
  - CEs to be equipped with proprietary service documentation that provides access to the latest method of procedures and event data to return equipment online in the most efficient manner possible.
  - Benchmarking against the entire service population to identify service trends and provide solutions rapidly or before they occur, reducing or eliminating customer events and outages.
- Vertiv Services CEs are trained in NFPA and OSHA best practices, and all processes and procedures strictly comply with NFPA 70A and 70E industry standards.

## SERVICE PERFORMED

### UPS Full Preventive Maintenance Service

#### *Semi-Annual Service*

1. Perform temperature check on all breakers, connections, and associated controls. Repair and/or report all high temperature areas.
2. Perform a complete visual inspection of the equipment including subassemblies, wiring harnesses, contacts, cables, and major components.
3. Check air filters for cleanliness. (if applicable)
4. Check rectifier and inverter snubber boards for discoloration.
5. Conduct diagnostic review with proprietary access to internal event logs.
6. Record all voltage and current meter readings on the module control cabinet or the system control cabinet.
7. Measure and record the dc float voltage at the UPS and at the battery
8. Measure and record the ripple voltage and current

#### *Annual Service*

1. Check power capacitors for swelling or leaking oil (if applicable).
2. Check for DC capacitor vent caps that have extruded more than 1/8" (if applicable).
3. Measure and record harmonic trap filter currents (if applicable).
4. Check the inverter and rectifier snubbers for burned or broken wires.
5. Check all nuts, bolts, screws, and connectors for tightness and heat discoloration.
6. Check fuses on the DC capacitor deck for continuity (if applicable).
7. With customer approval, perform operational test of the system, including unit transfer and battery discharge.
8. Calibrate and record all electronics to system specifications.
9. Check or perform Engineering Field Change Notices (FCN) as necessary.
10. Measure and record all low-voltage power supply levels.
11. Record phase-to-phase input voltage and currents.
12. Record real and apparent power for each phase.
13. Review system performance with customer to address any questions and to schedule any repairs.

### Battery Inspection Service - Performed During the UPS Annual PM Service

1. Check integrity of battery cabinet (if applicable).
2. Perform a visual inspection of the battery, battery cabinet or rack and battery room and note any deficiencies and recommendations.

## ASSUMPTIONS AND CLARIFICATIONS

Parts coverage excludes batteries, air filters, proactive full bank capacitor replacement and fan replacement.

Customer should check air filters monthly for cleanliness and replace as necessary.

Maintenance does not include System Control Cabinet, Power Tie, Breaker Cabinets, Load Bus Sync or Maintenance Bypass Cabinets.

The Battery Inspection Service listed above is only a visual inspection and is not intended to replace a full preventive maintenance program for the battery system.

Modular designed UPS systems may have less accessibility to listed "if applicable" checks above due to the design and usage of certain UPS systems.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

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- **Scheduling:** Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- **Site Access:** Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- **Equipment Access:** Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- **Shutdown:** Service may require shutdown of load to ensure electrical connection integrity.
- **Notification:** If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

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# BATTERY SEALED BASIC 8X5

## SEALED VRLA BATTERIES

### BASIC 8X5 SERVICE - 1 PM

#### SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Preventive Maintenance Service, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Labor & Travel	Does not include labor or parts coverage for full-string or partial-string replacement. Includes minor corrective labor and travel coverage Monday-Friday, 8am-5pm, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory-trained and authorized technician equipped with Vertiv Proprietary tools and software. Vertiv CEs and Vertiv Partners are the only approved OEM service providers for Vertiv products.

#### SERVICE PERFORMED

##### PM Service

1. Inspect the appearance and cleanliness of the battery and the battery room. Clean normal cell top dirt accumulation (to be done only with battery off line).
2. Measure and record the total battery float voltage and charging current.
3. Measure and record overall AC ripple voltage.
4. Measure and record overall AC ripple current.
5. Visually inspect the jars and covers for cracks and leakage.
6. Visually inspect for evidence of corrosion.
7. Measure and record the ambient temperature.
8. Verify the condition of the ventilation equipment, if applicable.
9. Verify the integrity of the battery rack/cabinet.
10. Measure and record 100% of the cell temperatures.
11. Measure and record the float voltage of all cells.
12. Measure and record all internal Ohmic values.
13. Provide a detailed written report noting any deficiencies and corrective action needed, taken and/or planned.
14. Re-tighten all connections to the battery manufacturer's specifications, if applicable.
15. Measure and record all battery connection Ohmic values, when applicable.

## ASSUMPTIONS AND CLARIFICATIONS

Does not include labor or parts coverage for full-string or partial-string replacement.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

- **Point of Contact:** Provide an authorized point of contact(s), specific for the scope of work, for scheduling and coordination purposes.
- **Scheduling:** Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- **Site Access:** Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- **Equipment Access:** Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- **Shutdown:** Service may require shutdown of load to ensure electrical connection integrity.
- **Notification:** If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

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# SCOPE OF WORK

## SEALED VRLA BATTERIES BASIC 8X5 SERVICE - 2 PM

### SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 2 Preventive Maintenance Services, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Labor & Travel	Does not include labor or parts coverage for full-string or partial-string replacement. Includes minor corrective labor and travel coverage Monday-Friday, 8am-5pm, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory-trained and authorized technician equipped with Vertiv Proprietary tools and software. Vertiv CEs and Vertiv Partners are the only approved OEM service providers for Vertiv products.

### SERVICE PERFORMED

#### PM Service

1. Inspect the appearance and cleanliness of the battery and the battery room. Clean normal cell top dirt accumulation (to be done only with battery off line).
2. Measure and record the total battery float voltage and charging current.
3. Measure and record overall AC ripple voltage.
4. Measure and record overall AC ripple current.
5. Visually inspect the jars and covers for cracks and leakage.
6. Visually inspect for evidence of corrosion.
7. Measure and record the ambient temperature.
8. Verify the condition of the ventilation equipment, if applicable.
9. Verify the integrity of the battery rack/cabinet.
10. Measure and record 100% of the cell temperatures.
11. Measure and record the float voltage of all cells.
12. Measure and record all internal Ohmic values.
13. Provide a detailed written report noting any deficiencies and corrective action needed, taken and/or planned.
14. Re-tighten all connections to the battery manufacturer's specifications, if applicable.
15. Measure and record all battery connection Ohmic values, when applicable.



## ASSUMPTIONS AND CLARIFICATIONS

Does not include labor or parts coverage for full-string or partial-string replacement.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

- Point of Contact: Provide an authorized point of contact(s), specific for the scope of work, for scheduling and coordination purposes.
- Scheduling: Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- Site Access: Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- Equipment Access: Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- Shutdown: Service may require shutdown of load to ensure electrical connection integrity.
- Notification: If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

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# SCOPE OF WORK

## PRECISION COOLING SERVICES (FLOORMOUNT, CEILING, WALLMOUNT & HEAT REJECTION) ESSENTIAL SERVICE - 2 PM

### SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 2 Preventive Maintenance Services, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv Services' Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states.
Service Professional	Performed by Vertiv factory trained and authorized technician. Vertiv Services is the OEM service provider for Liebert products.

### SERVICE PERFORMED

#### Filters

1. Check for restricted airflow.
2. Replace air filters as needed.
3. Examine filter switch.
4. Wipe entire section clean.

#### Blower Section

1. Verify that impellers are free of debris and move freely.
2. Check belt for condition and proper tension.
3. Replace belts as needed.
4. Verify that the bearings are in good condition.
5. Check the fan safety switch for proper operation.
6. Check the pulleys and motor mounts for tightness and proper alignment.

#### Air Cooled Condenser (If Applicable)<sup>1</sup>

1. Verify condenser coil cleanliness.
2. Brush clean and spray using hose and nozzle connected to local water source (if local water source is available).
3. Chemical cleaning of outdoor condensing unit is excluded from normal scheduled maintenance and can be performed on a time and material basis.
4. Examine motor mounts for tightness. Tighten if necessary.

<sup>1</sup>Applies to Air Cooled units only

5. Verify that the bearings are in good working order.
6. Confirm that the refrigerant lines are properly supported.

#### **Water/Glycol Condenser (If Applicable)<sup>1</sup>**

1. Check cleanliness of copper tubing.
2. Confirm that the water regulating valves are functioning properly.
3. Check the glycol solution level.
4. Check glycol freeze protection level.
5. Check for water/glycol leaks.

#### **Glycol Pump<sup>2</sup>**

1. Examine for any glycol leaks.
2. Determine proper pump operation.

#### **Steam Generating Humidifier (If Applicable)**

1. Check the canister for any deposits.
2. Check the condition of all steam hoses.
3. Examine the water make-up valve for any leaks.
4. Check and adjust potentiometers for optimal performance.

#### **Infrared Humidifier (If Applicable)**

1. Check the pan drain for any type of blockage.
2. Examine the humidifier lamps for proper operation.
3. Check the pan for any type of mineral deposits.

#### **Refrigerant Cycle/Section<sup>3</sup>**

1. Examine refrigerant lines for leaks or damage.
2. Using the sight glass, check lines for moisture.
3. Monitor suction pressure.
4. Monitor head pressure.
5. Monitor discharge pressure.
6. Check superheat.

#### **Electric Panel, Controls, and Ancillary Items**

1. Check fuses.
2. Check electrical connections.
3. Check contactors for pitting.
4. Using microprocessor controls, ensure proper operation of the unit components.
5. Inspect leak detection cabling (if connected to unit).

#### **Chilled water units - additional checks (if Applicable):<sup>4</sup>**

1. Inspect chilled water valve and actuator for proper operation.
2. Adjust/ tighten linkage if necessary.
3. Inspect internal chilled water piping and coil for leaks.

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<sup>1</sup>Applies to Water Cooled, Glycol Cooled, and GlyCool units only

<sup>2</sup>Applies to Water Cooled, Glycol Cooled, and GlyCool units only

<sup>3</sup>Applies to Air Cooled, Water Cooled, Glycol Cooled, and GlyCool units only

<sup>4</sup>Applies to Chilled Water units and units with free cooling only.

## ASSUMPTIONS AND CLARIFICATIONS

Parts coverage excludes: piping external from the unit, replacement of outdoor condensing unit, components showing physical damage, component failure due to irregular voltage conditions, pumps external to the unit, fire suppression system, unit control upgrades, network panels external to the unit, and leak detection panels. Rental of temporary spot coolers is also excluded.

Inspect Prior to Contract

## CUSTOMER RESPONSIBILITIES

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- Scheduling: Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Services Customer Resolution Center at 1-800-543-2378.
- Site Access: Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- Equipment Access: Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- Shutdown: Service may require shutdown of load to ensure electrical connection integrity.
- Notification: If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

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# SCOPE OF WORK

## UNINTERRUPTIBLE POWER SYSTEMS

### EXM UPS ONLY

### ESSENTIAL SERVICE - 1 PM

## SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Preventive Maintenance Service, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Internal Battery Coverage	Includes parts, labor, disposal and battery jars as required - up to 10% of the battery jars per year, not accumulated over contract term (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory trained and authorized technician. Vertiv is the OEM service provider for Liebert products.
Battery Recycling	Includes battery recycling as required, with documentation meeting EPA requirements.

## VERTIV PROPRIETARY SERVICE TOOLS AND SOFTWARE

Vertiv Customer Engineers (CEs) are the only authorized, factory- trained and OEM-supported service providers for Vertiv equipment with access to Vertiv's proprietary service tools and software to ensure optimal equipment performance.

- Using proprietary software PPvis™, Paramset™, and WinSVT™ CEs apply Vertiv's knowledge base to diagnose, configure and optimize your Vertiv equipment.
- Vertiv is the only authorized source for critical proprietary firmware updates providing your equipment the latest version of operational firmware to ensure equipment is running at optimal performance and efficiency levels.
- Vertiv exclusively enables:
  - Access to OEM engineering support and product enhancements.
  - Optimized methods of procedure for efficient service supported by proprietary documentation.
  - Improved MTBR and MTTR.
  - Root cause forensic analysis.
  - Continual improvements with tested and certified updates for software and hardware improvements throughout the equipment's lifecycle.
  - CEs to be equipped with proprietary service documentation that provides access to the latest method of procedures and event data to return equipment online in the most efficient manner possible.

- Benchmarking against the entire service population to identify service trends and provide solutions rapidly or before they occur, reducing or eliminating customer events and outages.
- Vertiv Services CEs are trained in NFPA and OSHA best practices, and all processes and procedures strictly comply with NFPA 70A and 70E industry standards.

## SERVICE PERFORMED

### UPS Full Preventive Maintenance Service

1. Perform a temperature check on all breakers, connections and associated controls. Repair and/or report all high temperature areas.
2. Perform a complete visual inspection of the equipment, including sub-assemblies, wiring harnesses, contacts, cables and major components.
3. Check air filters for cleanliness. (if applicable)
4. Record all voltage and current meter readings on the display.
5. Check all nuts, bolts, screws, and connectors for tightness and heat discoloration.
6. With customer approval, perform operational test of the system including unit transfer and battery discharge.
7. Calibrate and record all electronics to system specifications.
8. Check or perform Engineering Field Change Notices (FCN) as necessary.
9. Record phase-to-phase input voltage and currents.
10. Review system performance with customer to address any questions and to schedule any repairs.

### Internal Battery Full Preventive Maintenance Service (applicable to EXM models with internal batteries only)

1. Inspect the appearance and cleanliness of the battery and the battery room. Clean normal cell top dirt accumulation (to be done only with battery off line).
2. Measure and record the total battery float voltage and charging current.
3. Measure and record overall AC ripple current.
4. Measure and record overall AC ripple voltage.
5. Visually inspect the jars and covers for cracks and leakage.
6. Visually inspect for evidence of corrosion.
7. Measure and record ambient temperature.
8. Verify the condition of the ventilation equipment, if applicable.
9. Verify the integrity of the battery rack/cabinet.
10. Measure and record 100% of the cell temperatures.
11. Measure and record the float voltage of all cells.
12. Measure and record all internal impedance readings.
13. Provide a detailed written report noting any deficiencies and corrective action needed, taken and/or planned.
14. Re-tighten all battery connections to the battery manufacturer's specifications, offline only.

### Corrective Maintenance Performed as Required

1. Refurbish cell connections as deemed necessary by the detailed inspection report.

## ASSUMPTIONS AND CLARIFICATIONS

Parts coverage excludes air filters, proactive full bank capacitor replacement and fan replacement.

Customer should check air filters monthly for cleanliness and replace as necessary.

Maintenance does not include System Control Cabinet, Power Tie, Breaker Cabinets, Load Bus Sync or Maintenance Bypass Cabinets.

All battery checks are recorded through the Field DB reporting system. Only visual battery inspection and total battery voltages are to be recorded on the UPS E-form. The full battery maintenance inspection will be conducted through Field DB.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

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- Scheduling: Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- Site Access: Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- Equipment Access: Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- Shutdown: Service may require shutdown of load to ensure electrical connection integrity.
- Notification: If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

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# SCOPE OF WORK

## POWER DISTRIBUTION SYSTEMS

### ALL MODELS

### ESSENTIAL SERVICE - 1 PM

## SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Preventive Maintenance Service, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory trained and authorized technician. Vertiv is the OEM service provider for Liebert products.

## SERVICE PERFORMED

### Full Preventive Maintenance Service

1. Perform a complete visual inspection of the interior and exterior of equipment for any damaged or broken components.
2. Verify equipment is properly grounded and that the phase, neutral and ground wiring is in accordance with the Installation manual.
3. Check for proper clearance around the unit.
4. Clean interior of equipment for dirt and debris.
5. Inspect all circuit breaker(s), terminal blocks, and ground/neutral bus bar connections for tightness.
6. Inspect junction box terminals for tightness (if applicable).
7. Conduct a thermal scan of interior components, assemblies, and connectors for evidence of overheating and/or burnt components.
8. Inspect all option assemblies, associated cabling/wiring, and connectors for tightness (if applicable).
9. Verify all installed options are operating properly (if applicable).
10. Verify continuity of all fuses (if applicable).
11. Measure voltage and current at each panelboard main input breaker (phases, neutral and ground).
12. Verify all monitoring options (if applicable) are displaying values within preset parameters.
13. Check or perform Engineering Field Change Notices (FCN) as necessary.
14. Configuration of the LDM/LDMF (For Newly installed branch circuit breakers).
  1. Verify firmware and update as required.
  2. Verify the location, alarm set points, number of poles, and address of every newly installed breaker.



3. Verify the CT ratio for every newly installed breaker.
4. Demonstrate use of software tools. (if applicable)
5. (Excludes interoperability with SiteScan and Building Management Systems)
6. Save the configuration file to a laptop as a backup for customer. (If applicable)

## ASSUMPTIONS AND CLARIFICATIONS

Parts coverage excludes branch circuit breakers.

## CUSTOMER RESPONSIBILITIES

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- **Shutdown:** Service may require shutdown of load to ensure electrical connection integrity.
- **Notification:** If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

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## SCOPE OF WORK

### UNINTERRUPTIBLE POWER SYSTEMS

### PERIPHERALS MAINTENANCE BYPASS CABINET MODULE BATTERY DISCONNECT, LOAD BUS SYNC, POWER TIE, SLIM LINE DISTRIBUTION CABINET

### ESSENTIAL SERVICE - 1 PM

### SERVICE SUMMARY

Feature	Detail
On-Site Service	Includes 1 Preventive Maintenance Service, scheduled by the customer between 8am-5pm, Monday-Friday (excluding national holidays).
Response Time	Guaranteed 4-hour on-site emergency response, 7 days/week, 24 hours/day, within 150 miles of a Vertiv's Service City.
Customer Support	Includes access to the Customer Resolution Center (1-800-543-2378) and the Vertiv Customer Services Network Online Internet portal.
Parts	Includes parts coverage (limits may apply; see Assumptions and Clarifications, as applicable, for more details).
Labor & Travel	Includes 100% labor and travel coverage 7 days/week, 24 hours/day, within the 48 contiguous states and Hawaii.
Service Professional	Performed by Vertiv factory-trained and authorized technician equipped with Vertiv Proprietary tools and software. Vertiv CEs and Vertiv Partners are the only approved OEM service providers for Vertiv products.

### VERTIV PROPRIETARY SERVICE TOOLS AND SOFTWARE

Vertiv Customer Engineers (CEs) are the only authorized, factory- trained and OEM-supported service providers for Vertiv equipment with access to Vertiv's proprietary service tools and software to ensure optimal equipment performance.

- Using proprietary software PPvis™, Paramset™, and WinSVT™ CEs apply Vertiv's knowledge base to diagnose, configure and optimize your Vertiv equipment.
- Vertiv is the only authorized source for critical proprietary firmware updates providing your equipment the latest version of operational firmware to ensure equipment is running at optimal performance and efficiency levels.
- Vertiv exclusively enables:
  - Access to OEM engineering support and product enhancements.
  - Optimized methods of procedure for efficient service supported by proprietary documentation.
  - Improved MTBR and MTTR.
  - Root cause forensic analysis.
  - Continual improvements with tested and certified updates for software and hardware improvements throughout the equipment's lifecycle.
  - CEs to be equipped with proprietary service documentation that provides access to the latest method of procedures and event data to return equipment online in the most efficient manner possible.
  - Benchmarking against the entire service population to identify service trends and provide solutions rapidly or before they occur, reducing or eliminating customer events and outages.

- Vertiv Service CEs are trained in NFPA and OSHA best practices, and all processes and procedures strictly comply with NFPA 70A and 70E industry standards.

## SERVICE PERFORMED

1. Perform a complete visual inspection of the equipment, including sub-assemblies, wiring harnesses, contacts, cables and major components.
2. Check all mechanical connections for tightness and heat discoloration, making corrections where necessary.
3. Clean any foreign material and dust from internal compartments.
4. Perform a status check of alarm circuits. (If Applicable).
5. Calibration of the equipment to meet manufacturer's specifications (if applicable).
6. Operational checkout of the system to include transfers and proper status indications.
7. Check or perform Engineering Field Change Notices (FCN) as necessary.
8. Return unit to operational service with normal load then measure and verify display indications.

## ASSUMPTIONS AND CLARIFICATIONS

Includes 100% parts coverage, excluding circuit breakers and switches.

## CUSTOMER RESPONSIBILITIES

In order to provide timely, accurate and thorough execution of the services described herein, Vertiv requests the following:

- Point of Contact: Provide an authorized point of contact(s), specific for the scope of work, for scheduling and coordination purposes.
- Scheduling: Make dates available for scheduling service. All visits must be requested 10 business days in advance of need by contacting the Vertiv Customer Resolution Center at 1-800-543-2378.
- Site Access: Prior to time of scheduled work, provide site access including any customer required escort, security clearance, safety training and badging for Vertiv service personnel.
- Equipment Access: Convenient access to the equipment covered by the Scope of Work. Prior to scheduled time of work, notify Vertiv service personnel of any special requirements for equipment access including lifts, ladders, etc.
- Shutdown: Service may require shutdown of load to ensure electrical connection integrity.
- Notification: If for any reason the work cannot be performed during scheduled time, notify Vertiv service personnel 24-hours prior to scheduled event.

## TERMS AND CONDITIONS

Subject to all Terms & Conditions as noted in the Vertiv Terms & Conditions or the terms of a Master Agreement between the parties, if any, shall apply.