VERTIV.

Brochure

# Vertiv™ Liebert® APS UPS Lithium-Ion & VRLA

5kVA – 20kVA N+1 Modular, redundant online UPS for edge and critical IT environments.
The first Single Phase modular UPS with VRLA and Lithium-Ion battery options.
Scalable for whatever tomorrow brings.

# Scalable, modular power protection for critical IT and edge environments

*Vertiv™ Liebert® APS UPS combines modular scalability and flexible battery support for IT and edge environments. Compatible with both VRLA and lithium-ion batteries, it delivers reliable power protection from 5 to 20kVA (N+1).*

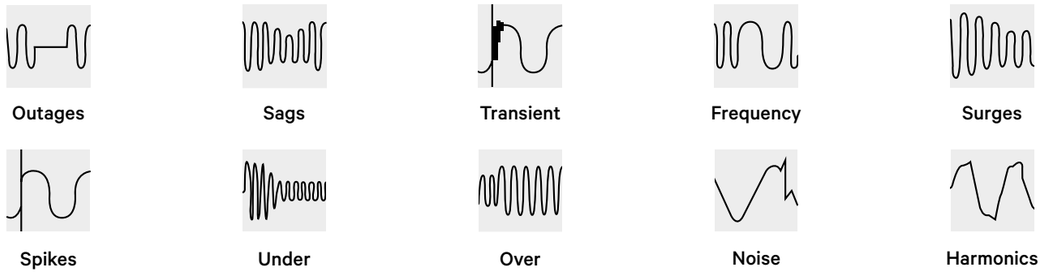
## Modular power on demand

Vertiv Liebert APS UPS grows with your business. Power modules (in 5kVA/4.5kW increments) and battery modules install quickly, to meet changing load requirements. The modular design helps right-size capacity at installation and scale over time with a pay-as-you-grow approach. Hot-swappable modules simplify maintenance and keep systems online during upgrades for maximum uptime.

## Always-on protection

Vertiv Liebert APS UPS delivers built-in N+1 redundancy options for both power and battery modules, eliminating single points of failure and keeping critical loads protected even during maintenance. Its high overload capacity handles short-term surges without switching to bypass power, while a wide input voltage window reduces unnecessary battery use and extends battery life. This makes Vertiv Liebert APS UPS ideal for the rising demands of AI, edge computing, and other mission-critical applications applications.

## Protection against all critical power problems




## Remote management and intelligent monitoring

Every Vertiv Liebert APS UPS ships with the factory-installed Vertiv™ Liebert® IntelliSlot™ RDU120 Card communications card compliant to the highest level of security standard UL2900-1. The card enables secure monitoring and real-time diagnostics.

The modular design of the Vertiv Liebert APS UPS reduces mean time to repair (MTTR), enabling maximum uptime and operational efficiency.



# Industry-first UPS supporting dual battery chemistry: VRLA or Lithium-Ion

*Vertiv™ Liebert® APS UPS is the first single phase UPS that offers the flexibility to choose between VRLA or lithium-ion battery technologies—all within the same UPS frame. This innovation allows organizations to adapt their power strategy without replacing the entire system.*

## Dual battery compatibility

Veriv Liebert APS UPS supports either VRLA or lithium-ion battery modules in the same frame. VRLA remains a practical choice for shorter runtime or cost-sensitive environments, while lithium-ion offers longer useful life, faster recharge, and better performance at higher operating temperatures. Both battery types integrate seamlessly with the UPS, enabling flexible runtime, cost optimization, and maintenance strategies.

## Why choose lithium-ion technology?

Lithium-Ion batteries offer a longer-lasting alternatives to traditional VRLA systems. With a service life of up to 10 years, they significantly reduce replacement cycles and lower the Total Cost of Ownership (TCO). Their fast recharge capability enables higher system availability during frequent outages, while integrated Battery Management Systems (BMS) provide real-time monitoring and automated safety protections. Lithium-ion technology also offers better tolerance to higher operating temperature variations and reduces performance risks in challenging environments. Combined with minimal maintenance requirements and a smaller environmental footprint, lithium-ion is the ideal choice for organizations seeking long-term reliability and uninterrupted power protection in mission-critical applications.

## Lithium safety - $LiFePO_4$ technology

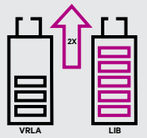
Vertiv Liebert APS UPS uses lithium iron phosphate ($LiFePO_4$ or LFP) chemistry, the safest Lithium-Ion chemistry available. These batteries feature high thermal stability, broad heat tolerance, and a cobalt-free design. Each module includes intelligent charging and an advanced BMS to prevent over-discharge, short circuits, and cell imbalance, delivering maximum safety and reliability for critical infrastructure and commercial/industrial environments.

## Flexibility & field retrofit design

Upgrading to lithium-ion has never been easier. The Vertiv Liebert APS UPS battery system is designed for simple field retrofits without requiring firmware updates. Switch from VRLA to lithium-ion through Vertiv's service team or have your team perform the upgrade on-site. By ordering lithium-ion battery strings and replacing them in the existing frame, users can modernize their UPS without heavy investment, firmware updates, or downtime. This flexibility allows businesses to build power infrastructure that supports future expansion while controlling costs.

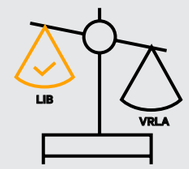
## Why should you choose lithium-Ion technology?

**Longer life**




**Lower TCO**

**Small and lighter**




**Longer runtime**

**Fast battery recharge**

5 YEAR WARRANTY

RoHS 2002/95/EC

# Vertiv™ Liebert® APS UPS features

## HMI module

LCD display for local monitoring, configuration, and status updates.

## Power module

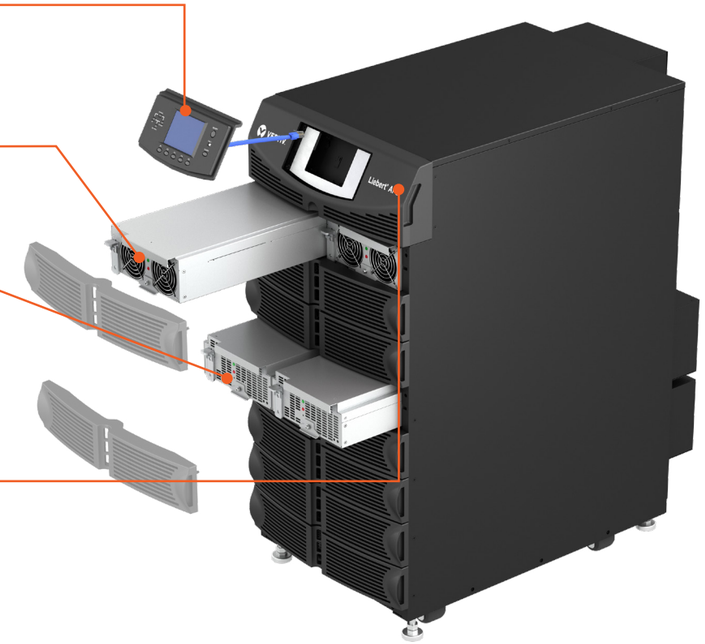
Adds 5kVA / 4.5kW of power capacity, enabling quick scaling or redundancy.

## Battery module

Hot-swappable strings (VRLA or lithium-ion) expand runtime and adapt to site requirements.

## System control and monitoring units

Redundant control units (standard on all APS frames), coordinate all modules with fault-tolerant logic to maintain system availability.




## Vertiv™ Liebert® IntelliSlot™ RDU120 Card

Factory-installed card certified to UL2900-1 enabling secure remote management, real-time diagnostics, and environmental monitoring through Vertiv™ LIFE™ Services.

## Optional power output distribution modules (Up to two PODs depending on frame choice)

Flexible outlet configurations available for different load requirements in addition to the standard hardwire output.

***See PODs options on page 12***

# Built-in redundancy and modular design for maximum uptime

*Vertiv™ Liebert® APS UPS is engineered for continuous availability through a fault-tolerant modular design that keeps power conditioned and stable even during maintenance or component failure.*

## System architecture and availability

| | |
|---|---|
| Module-level N+1 redundancy | Eliminates single points of failure and maintains output power if a module is removed or replaced. |
| FlexPower™ Core assemblies | Delivers capacity in 5kVA / 4.5kW increments for precise configuration and easy expansion. |
| Fault-tolerant design | Isolates a module in error while the system continues to operate. |
| Up to 200% overload capacity | Maintains conditioned output during brief overload events without switching to bypass. |

## Battery and power management

| | |
|---|---|
| Integrated battery monitoring and temperature-compensated charging | Extends battery service life and reduces replacement costs. |
| Battery Management System (BMS) | Each lithium-ion battery module has it own BMS to provide precise battery management and monitoring at the cell level. |
| Modular power, control, and battery components | Simplifies service through user-replaceable design, cutting maintenance time and cost. |
| Optional external maintenance bypass cabinet | Enables safe service or upgrades without taking the load offline. |

## Performance and deployment flexibility

| | |
|---|---|
| 0.9 output power factor | Provides more usable kilowatts to IT and edge loads in the same footprint. |
| Wide input-voltage window | Minimizes unncessary battery use and helps preserve runtime availability. |
| Transformer and non-transformer models | Balances efficiency and protection in both three-wire and four-wire applications. |
| Power Output Distribution (POD) options | Offers configurable outlet layouts to meet application requirements. |

# Key applications

## Retail

Power failure in retail stops transactions, disrupts inventory system, and negatively impacts customer experience. Outages interrupt point-of-sale systems, slow down order processing, and affect in-store services that rely on connected devices. The conditioned power provided by the Vertiv™ Liebert® APS UPS keeps core retail operations functioning even when power interruptions occur and allows payment systems, servers, and network devices to run smoothly. Its modular, hot-swappable design lets you add power or battery capacity as business requirements change.

## Finance

Banks and financial institutions depend on uninterrupted power for secure transactions and continuous access to data. Even brief outages can distrupt ATM networks, delay approvals, or affect customer access to online and mobile banking. Clean, consistent power keeps fraud-detection tools, branch systems, and communication links stable throughout day-to-day operations. Vertiv Liebert APS UPS delivers stable, conditioned power to keep critical systems online. Built-in redundancy and scalable capacity support branch operations and increasing digital demand.

## Infrastructure

Transportation, utilities, emergency response centers and other infrastructure networks rely on constant power for control, monitoring, and communications. Outages can interrupt signaling, delay responses, or limit visibility across large, distributed operations. A resilient power infrastructure helps maintain uptime for sensors, controllers, and dispatch systems that support reliable service delivery. Vertiv Liebert APS UPS provides reliable, redundant power to keep these systems operating. Its modular design enables fast service and expansion without taking the system offline.



# Build your Vertiv™ Liebert® APS UPS system in three simple steps

## Standard configurations

The Vertiv™ Liebert® APS UPS includes power modules, battery modules, and a pre-installed communication card. Systems are sold as pick-to-order, allowing organizations to start with a standard configuration and add additional power modules and/or battery runtime as needed. All required components ship together in a single shipment. For custom-configured solutions, please contact your local Vertiv representative.

### Step 1: Choose your frame size and battery type

Select the frame size based on maximum power rating, input wiring type, and available space for battery modules. Then, choose either lithium-ion or VRLA batteries according to your site's runtime requirements, budget, and maintenance preferences.

With Vertiv Liebert APS UPS, you have the flexibility to select the battery chemistry that best fits your needs. VRLA batteries are a cost-effective choice for shorter runtimes and budget-sensitive deployments, offering proven reliability for standard environments. Lithium-Ion batteries, deliver up to 10 years of service life, faster recharge times, and advanced monitoring through integrated Battery Management Systems (BMS), making them ideal for high-performance applications, challenging environments, and remote or unmanned locations.

Whether your priority is lower upfront cost or long-term efficiency, Vertiv Liebert APS UPS gives you the freedom to choose.

**Vertiv™ Liebert® APS UPS**

**AL3/AS3 Series** **AL4/AS4 Series** **AL5/AS5 Series** **AL6/AS6 Series**

## Vertiv™ Liebert® APS UPS

**AL3/AS3 Series**

*15 kVA, 12 Bay, Xfmr-based*
*17.3 W x 31.5 D x 41.7 H inches*
*(440 W x 800 D x 1060 H mm)*

**AL4/AS4 Series**

*20 kVA, 16 Bay, Xfmr-based*
*17.3 W x 33.5 D x 48.8 H inches*
*(440 W x 850 D x 1240 H mm)*

**AL5/AS5 Series**

*15 kVA, 10 Bay, Xfmr-free*
*17.3 W x 31.5 D x 27.4 H inches*
*(440 W x 800 D x 695 H mm)*

**AL6/AS6 Series**

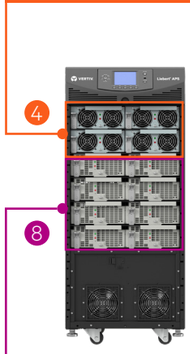
*20 kVA, 16 Bay, Xfmr-free*
*17.3 W x 33.5 D x 38.2 H inches*
*(440 W x 850 D x 970 H mm)*

| APS series | Input | Output | Max capacity |
|---|---|---|---|
| AL3/AS3 | 208V, 3-Wire (L-L-G) | 208/120V | 15kVA N+1 |
| AL4/AS4 | 208V, 3-Wire (L-L-G) | 208/120V | 20kVA N+1 |
| AL5/AS5 | 208/120V 4-Wire (L-L-N-G) | 208/120V | 15kVA N+1 |
| AL6/AS6 | 208/120V 4-Wire (L-L-N-G) | 208/120V | 20kVA N+1 |

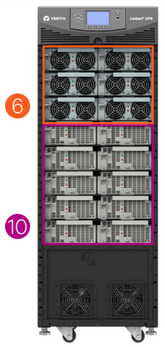
*Tips:*

Do you have a neutral available at the UPS input?
Yes – AL/AS5 (15kVA N+1) or AL/AS6 (20kVA N+1)
No – AL/AS3 (15kVA N+1) or AL/AS4 (20kVA N+1)

**Bays for power, charger, or battery modules**

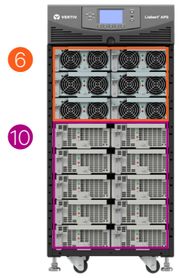



AL3/AS3 Series




AL4/AS4 Series


AL5/AS5 Series




AL6/AS6 Series

**Bays for battery modules**

| Frame Size | Lithium | VRLA | Input type | Output voltage | Max capacity | Power/Charger modules bays | Battery modules bays |
|---|---|---|---|---|---|---|---|
| Size-3 | AL3 | AS3 | Transformer-based 208V, 240V 3-Wire (L-L-G) | 208/120V, 240/120V | 15kVA (N+1) 13.5kW | Top 4-Bays | All 12-Bays |
| Size-4 | AL4 | AS4 | Transformer-based 208V, 240V 3-Wire (L-L-G) | 208/120V, 240/120V | 20kVA (N+1) 18.0kW | Top 6-Bays | All 16-Bays |
| Size-5 | AL5 | AS5 | 208/120V, 240/120V 4-Wire (L-L-N-G) | 208/120V, 240/120V | 15kVA (N+1) 13.5kW | Top 4-Bays | All 10-Bays |
| Size-6 | AL6 | AS6 | 208/120V, 240/120V 4-Wire (L-L-N-G) | 208/120V, 240/120V | 20kVA (N+1) 18.0kW | Top 6-Bays | All 16-Bays |



## Step 2: Determine power rating and battery strings

Choose the right power capacity and battery configuration to meet your runtime and redundancy needs. Use the table below to find the correct catalog number and battery string quantity for either Lithium-ion or VRLA technology.

| Frame | Power rating | Lithium-Ion model # | VRLA model# | # Battery strings | # Battery modules |
|---|---|---|---|---|---|
| AL3/AS3 | 5 kVA (4.5kW ) | AL3A0NHUGNNXLKB | AS3A0NCUGNNXLKB | 1 | 2 |
| | 10 kVA (9kW) | AL3B0NHVGNNXLKB | AS3B0NCVGNNXLKB | 2 | 4 |
| | 15 kVA (13.5kW) | AL3C0NHWGNNXLKB | AS3C0NCWGNNXLKB | 3 | 6 |
| AL4/AS4 | 5 kVA (4.5kW ) | AL4A0NHUGNNXLKB | AS4A0NCUGNNXLKB | 1 | 2 |
| | 10 kVA (9kW) | AL4B0NHVGNNXLKB | AS4B0NCVGNNXLKB | 2 | 4 |
| | 15 kVA (13.5kW) | AL4C0NHWGNNXLKB | AS4C0NCWGNNXLKB | 3 | 6 |
| | 20 kVA (18kW) | AL4D0NHXGNNXLKB | AS4D0NCXGNNXLKB | 4 | 8 |
| AL5/AS5 | 5 kVA (4.5kW ) | AL5A0NHUGNNXLKB | AS5A0NCUGNNXLKB | 1 | 2 |
| | 10 kVA (9kW) | AL5B0NHVGNNXLKB | AS5B0NCVGNNXLKB | 2 | 4 |
| | 15 kVA (13.5kW) | AL5C0NHWGNNXLKB | AS5C0NCWGNNXLKB | 3 | 6 |
| AL6/AS6 | 5 kVA (4.5kW ) | AL6A0NHUGNNXLKB | AS6A0NCUGNNXLKB | 1 | 2 |
| | 10 kVA (9kW) | AL6B0NHVGNNXLKB | AS6B0NCVGNNXLKB | 2 | 4 |
| | 15 kVA (13.5kW) | AL6C0NHWGNNXLKB | AS6C0NCWGNNXLKB | 3 | 6 |
| | 20 kVA (18kW) | AL6D0NHXGNNXLKB | AS6D0NCXGNNXLKB | 4 | 8 |

***Note:*** *At 100% load, the Lithium-ion battery option provides approximately 8 minutes of runtime, while the VRLA option offers about 5 minutes. For detailed runtime charts and additional information, please refer to the Technical Specifications section on page 16.*

- Configuration options

Your Vertiv™ Liebert® APS UPS may be designed as non-redundant or redundant, depending on the criticality of the attached load:

- Non-redundant: All installed modules share the full load. If one fails, the system transfers to bypass power.
- Redundant (N+1): Add one extra power module beyond your load requirement to provide fault tolerance and maximum availability. All installed modules share the full load. In the event of overload or unexpected hardware issues, the remaining modules support the full load. If a battery module is compromised the remaining modules in the system will provide reduce runtime but will still deliver battery backup in the event of a power failure.
- Example: For a 15kVA load, you would install four 5kVA modules (20kVA total for 15kVA N+1). If one module malfunctions, it is automatically isolated, and the remaining modules continue supplying power without interruption.

- How to configure redundancy:
  - Add one extra power module for N+1 redundancy; add two extra power modules for N+2 redundancy, etc.
  - Add one extra battery module for battery redundancy.
  - For complete redundancy, add both.

### Redundant control units

- Standard on all APS frames, these units use fault-tolerant logic to coordinate all modules, enabling continuous system availability.
- Redundancy mode and redundancy alarms can be configured via the LCD screen on the UPS. (Refer to user guide for more details)

*Note: The actual selection of extra modules for redundancy will be done in Step 3.*

### Step 3: Select accessories

The Vertiv™ Liebert® APS UPS offers high flexibility and scalability for a wide range of applications. Whether expanding an existing system to support rising power demands or adding redundancy to strengthen system availability, additional power modules or battery modules can be integrated into new or existing installations. Installation is simple: just slide the modules into the prewired slots. This can be done by your team or by Vertiv's expert service professionals.

Beyond these options, the system can be enhanced with external battery cabinets (EBCs) for extended runtime, maintenance bypass cabinets, communication cables, rail-mount kits, and a variety of Power Output Distribution (POD) unit configurations. These accessories help the Vertiv Liebert APS UPS adapt seamlessly to evolving requirements.

**What's Included:**

- UPS
- Power and battery modules
- Quick Start Guide
- UPS with quick start guide
- Vertiv™ Liebert® Intellislot RDU120 Network Card
- Pre-installed casters and leveling feet
- Removable LCD display

## FlexPower™ Module options

FlexPower™ Modules enable quick and easy power capacity upgrades to Vertiv Liebert APS UPS systems in 5kVA / 4.5kW increments. These hot-swappable modules can be installed without taking the unit offline.

| Model number | Description |
|---|---|
| APS5KPWRMOD1 | 5kVA/4.5kW Power Module for AS5/AL5 & AS6/AL6 series Liebert APS systems |
| APS5KPWRMOD2 | 5kVA/4.5kW Power Module for AS3/AL3 and AS4/AL4 series Liebert APS systems |

## Battery and battery charger modules

### Vertiv Liebert APS UPS battery module

Each battery string consists of two battery modules and occupies two bay in the Vertiv Liebert APS UPS system and must be installed as a full set. Partial installation is not supported.

The Vertiv Liebert APS UPS platform offers flexibility to choose either lithium-ion or VRLA technology. However, mixing these two battery types within the same UPS–whether in new installations or existing systems–is not permitted. This approach maintains optimal performance, safety, and reliability.

| Model number | Description |
|---|---|
| APSLIBATMODHU | Vertiv Liebert APS Lithium-Ion Battery String (2 Battery Modules) |
| APSBATMODCU | Vertiv Liebert APS VRLA Battery String (2 Battery Modules) |



### Vertiv™ Liebert® APS UPS charger module

The APSCHRGRMOD 10A battery charger that operates in parallel with the chargers integrated in each power module. To increase runtime in the Vertiv Liebert APS UPS, this 10A charger should be used when battery string to power module ratio is greater than 3:1.

## External Battery Cabinet (EBC) for Vertiv™ Liebert® APS UPS

When your critical applications demand longer runtime, the Vertiv Liebert APS UPS External Battery Cabinet (EBC) delivers scalable energy storage without compromising flexibility. Designed for all Vertiv Liebert APS UPS models, the EBC features a 14-bay cabinet that can accommodate 1 to 7 Vertiv Liebert APS UPS battery strings, allowing you to tailor backup duration to your specific needs. This modular approach enables easy expansion, optimized performance, and seamless integration with your Vertiv Liebert APS UPS system–providing reliable power protection for edge and IT environments.

| Battery Strings | Lithium-Ion Model # | VRLA Model# |
|---|---|---|
| 1 Battery String | AL7EBC1HHUBXLKB | AS7EBC1CCUBXLKB |
| 2 Battery Strings | AL7EBC2HHUBXLKB | AS7EBC2CCUBXLKB |
| 3 Battery Strings | AL7EBC3HHUBXLKB | AS7EBC3CCUBXLKB |
| 4 Battery Strings | AL7EBC4HHUBXLKB | AS7EBC4CCUBXLKB |
| 5 Battery Strings | AL7EBC5HHUBXLKB | AS7EBC5CCUBXLKB |
| 6 Battery Strings | AL7EBC6HHUBXLKB | AS7EBC6CCUBXLKB |
| 7 Battery Strings | AL7EBC7HHUBXLKB | AS7EBC7CCUBXLKB |

### EBC Cabinet extender cables

| Model number | Description |
|---|---|
| APSEBCC3L1M | 1 meter EBC cable |
| APSEBCCBL3M | 3 meter EBC cable |
| APSEBCC3L5M | 5 meter EBC cable |

## Power Output Distribution (POD) options

Add PODs to match the output configuration of your equipment. Each POD provides multiple receptacle layouts and installs quickly without rewiring. Each APS UPS frame supports up to two PODs.

| POD model number | Output Connections |
|---|---|
| PD2-101 | (8) 5-15/20R T-slot, (2) L6-30R |
| PD2-102 | (4) 5-15/20R T-slot, (4) L6-20R |
| PD2-103 | (4) 5-15/20R T-slot, (4) L6-30R |
| PD2-104 | (4) 5-15/20R T-slot, (2) L6-30R, (2) L6-20R |
| PD2-105 | (4) 5-15/20R T-slot, (2) L5-30R, (2) L5-20R |
| PD2-106 | (4) L5-20R, (4) L6-20R |
| PD2-107 | (4) L5-20R, (4) 5-15/20R T-slot |
| PD2-108 | (2) L6-30R, (2) L6-20R |
| PD2-109 | (2) L14-30R |
| PD2-200 | (4) IEC320-C19, (4) IEC320-C13 |
| PD2-201 | (2) IEC320-C19, (8) IEC320-C13 |
| PD2-202 | (12) IEC320-C13 |
| PD2-204 | (4) IEC320-C13, (2) IEC309-32A |

## Vertiv™ Liebert® Maintenance Bypass Cabinet option

The Vertiv™ Liebert® MBC 20KVA (VMBC-20KMVRT4U) is a 4U rack-mountable maintenance bypass cabinet with power output distribution. Designed for Vertiv™ Liebert® APS AS/AL 3/4/5/6 UPS models, it is an accessory that allows you to perform maintenance and/or replacement without power interruption to the connected load. It has three (3) L14-30R outlets, space for an optional PD2 POD, and has an input/output terminal block for hardwiring of the AC input source and output (if needed). It also includes simplified intra/inter-rack connections.

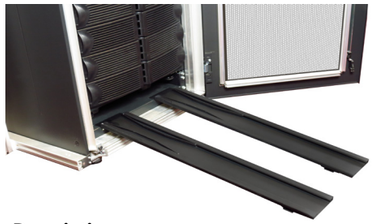
**Vertiv™ Maintenance Bypass Cabinet Option**

*Suitable for use with all Vertiv™ 5-20kVA single phase UPS.*
*Integrated lock out/tag out arm for maximum site and personnel safety.*

| MBC model number | Dimensions | Input | Output |
|---|---|---|---|
| VMBC-20KMVRT4U | 16.9W x 21.6D x 6.8H (in)<br>430W x 549D x 173H (mm) | Hardwired (L-L-N-G) | 3x L14-30R,<br>Hardwired,<br>Optional PD2 POD |

## Rack mount kit

Each Vertiv™ Liebert® APS UPS includes factory-installed casters and levelling feet. For rack installations, an optional rack mount kit allows the unit to roll into the bottom of a 600mm wide four-post rack. The kit includes ramps, brackets, and a bezel.



| Model number | Application | Model(s) supported | Style | Description |
|---|---|---|---|---|
| APSRACKKIT | 4-Post rack | AS3, AL3, AS4, AL4, AS5, AL5, AS6, and AL6 Series APS | Shelf & bracket | Includes all necessary hardware to mount the Vertiv Liebert APS UPS in a 600mm wide 4-Post rack. Included with the kit is a shelf, two sets of ramps, rackmount brackets, and a bezel. |



## Network communication cards

The factory-installed Vertiv™ Liebert® UPS APS Intellislot™ RDU120 card enables communication between Vertiv products such as Vertiv™ Environet™ Alert, Vertiv™ Power Insight, Vertiv™ Power Assist and Vertiv™ LIFE™ Services. It provides web access, data via SNMP, Modbus and BACNet for Vertiv™ equipment. Environmental sensor data access is provided via web and SNMP.


### Benefits

- Secure data transport across connected systems (Certified to UL2900-1)
- Secure boot with a hardware trust anchor
- Advanced security protcols
- Real-time view of parametric data and system statuses
- Insight into environmental conditions for efficient decision-making
- Flexible communication across diverse device protocols
- Seamless integration with IT and building management platforms
- Remote monitoring and control via web, SNMP, Modbus, and BACnet
- Streamlined configuration and firmware upgrades for simpler fleet management

## Vertiv™ UPS software benefits ladder

| Feature | Vertiv™ Power Assist | Vertiv™ Power Insight | Vertiv™ Environet™ Alert | Vertiv™ DSView™ Solutions | Vertiv™ Environet™ Connect |
|---|---|---|---|---|---|
| **Management** | | | | | |
| Hypervisor plugin | | vCenter, vXRail, Nutanix | | | |
| Automated server shutdown | • | • | | | |
| **Reporting** | | | | | |
| Analytics and reporting | | | • | | • |
| Historical data | | • | • | | • |
| Thresholds and alerts | | • | • | • | • |
| Alarm management | • | • | • | • | • |
| **Monitoring** | | | | | |
| IT device monitoring | | | | • | |
| Thermal monitoring | | | • | | • |
| Power monitoring | UPS only | UPS and Rack PDU | • | UPS, Rack PDU, Servers | • |
| **Specifications** | | | | | |
| Protocol support | USB/SNMP | SNMP | SNMP, Modbus TCP, BACnet IP | SNMP, IPMI, Redfish | SNMP |
| Equipment support | Vertiv only | Vertiv only | Multi-vendor | Multi-vendor | Multi-vendor |
| Max. devices support | 2 | 100 | Scalable | Scalable | Scalable |
| Software architecture | On-prem | On-prem | On-prem | On-prem | Multi-tenant cloud based |
| Licensing | Free | Free | Perpetual | Subscription | Subscription |

## Network communication cards and environmental sensors

Optional Intellislot cards are compatible with all Vertiv™ Liebert® APS UPS systems.

| | |
|---|---|
| A2D-10 | Analog to digital converter provides the ability to connect a dry contact, 0-10V, or 4-20mA sensor to a Plug-n-Play sensor port. Includes a 10ft / 3m cable. |
| A2D-50 | Analog to digital converter provides the ability to connect a dry contact, 0-10V, or 4-20mA sensor to a Plug-n-Play sensor port. Includes a 10ft / 3m cable. |
| GT3HD | Temperature, humidity, and dew point sensor with dual inputs for included 3ft / .9m and 6ft / 1.8m temperature sensors for monitoring top, middle, and bottom of a rack or cabinet. Includes a supplementary input for daisy-chaining additional sensors. Includes 10ft / 3m cable. |
| GT3HD-50 | Temperature, humidity, and dew point sensor with dual inputs for included 3ft / .9m and 6ft / 1.8m temperature sensors for monitoring top, middle, and bottom of a rack or cabinet. Includes a supplementary input for daisy-chaining additional sensors. Includes 50ft / 15.2m cable. |
| GTHD | Temperature, humidity, and dew point sensor. Includes a supplementary input for daisy-chaining additional sensors. Includes 10ft / 3m cable. |
| GTHD-50 | Temperature, humidity, and dew point sensor. Includes a supplementary input for daisy-chaining additional sensors. Includes 50ft / 15.2m cable. |
| SRT-12 | Temperature sensor used to monitor temperature in critical environments. Includes a 12ft/ 3.6m cable. |
| SRT-20 | Temperature sensor used to monitor temperature in critical environments. Includes a 20ft / 6.1m cable. |
| SRT-50 | Temperature sensor used to monitor temperature in critical environments. Includes a 50ft /15.2m cable. |
| SRT-100 | Temperature sensor used to monitor temperature in critical environments. Includes a 100ft /30.4m cable. |
| RTAFHD3-12 | Temperature, airflow, humidity, and dew point sensor. Includes 12ft / 3.6m cable. |
| RTAFHD3-20 | Temperature, airflow, humidity, and dew point sensor. Includes 20ft / 6.1m cable. |
| RTAFHD3-50 | Temperature, airflow, humidity, and dew point sensor. Includes 50ft / 15.2m cable. |
| RTAFHD3-100 | Temperature, airflow, humidity, and dew point sensor. Includes 100ft / 30.4m cable. |
| FS-15 | 0-5VDC conductivity based flood sensor used to detect the presence of water. Includes a 15ft/ 4.5m cable. |
| FS-100 | 0-5VDC conductivity based flood sensor used to detect the presence of water. Includes a 100ft / 30.4m cable |
| RDPS | Magnetic normally-closed dry-contact sensor used to monitor remote door position. Includes 30ft / 9.1m cable. |
| RDPS-50 | Magnetic normally-closed dry-contact sensor used to monitor remote door position. Includes 50ft / 15.2m cable. |
| RDPS-100 | Magnetic normally-closed dry-contact sensor used to monitor remote door position. Includes 100ft / 30.4m cable. |
| PFS-100 US | 0-5V power failure sensor to monitor the presence of utility power. Includes a 100ft / 30.4m cable and US NEMA power supply |

# Services

## Power startup service - Power and battery modules installation and start-up only

- Expands the Vertiv™ Liebert® APS UPS warranty to include on-site parts and labor for the full two-year warranty period
- Startup of new UPS performed by Vertiv factory trained technician
- Services performed Monday thru Friday 8-5 pm or 7 X 24, excluding national holidays within the 48 contiguous states and Hawaii
- The site trip includes the following services for each UPS system:
  - UPS integration (frame + power module(s) + battery module(s))
  - Non powered inspection
  - UPS electrical and operational checkout
  - Full parts and labor for any work required on the UPS
  - Customer operation training at time of start-up
    *NOTE: UPS frame must be installed and hardwired by customer with a certified electrician.*
- **Start-up Plus:** Adds 1 full Preventive Maintenance (PM) visit during the standard warranty period

| **Installation and startup only** | **Standard** | | **Plus** | |
|---|---|---|---|---|
| **Equipment model / type** | **M-F, 8-5** | **7x24** | **M-F, 8-5** | **7x24** |
| All Vertiv™ Liebert® APS UPS Models | SUAPSXXMF | SUAPSXX24 | SUPAPSXXMF | SUPAPSXX24 |

## Power assurance package summary — 5-year on-site emergency response

- Full-service five (5) year contract term commencing upon the start-up date
- On-site service support
- Includes all above "Power Startup Services" and 5-year on-site services
- Services performed 7 X 24, excluding national holidays within the 48 contiguous states
- One Preventive Maintenance visit after 3rd year scheduled by the customer (excluding national holidays)
- 100% parts coverage, including internal batteries, POD and web card
- 100% labor and travel coverage 7 days/week, 24 hours/day
- 24-Hour Customer Resolution Center via 1-800-LIEBERT
- Access to Customer Services Network portal

VRLA models include a 2-year warranty, while lithium-ion models provide 5-year coverage for the system and batteries.

## Power assurance package options

| **Bundled start-up service and 5-year on-site emergency response** | **Standard** | **With LIFE services** |
|---|---|---|
| **Equipment model / type** | **Model number** | **Model number** |
| Vertiv™ Liebert® APS AS3/AL3 & AS5/AL5 Series | PAPAPS-15K | PAPAPS-15KLF |
| Vertiv™ Liebert® APS AS4/AL4 & AS6/AL6 Series | PAPAPS-20K | PAPAPS-20KLF |

# Technical specification

## Run-time

| | Standard catalog numbers | | | Lithium-Ion run-times | | | |
|---|---|---|---|---|---|---|---|
| **Frame** | **Power rating** | **Lithium-Ion Model #** | **# Battery strings** | **Run-time 25% load** | **Run-time 50% load** | **Run-time 75% load** | **Run-time 100% load** |
| **AL3** | 5 kVA (4.5kW ) | AL3A0NHUGNNXLKB | 1 | 31 mins | 16 mins | 11 mins | 8 mins |
| | 10 kVA (9kW) | AL3B0NHVGNNXLKB | 2 | 32 mins | 17 mins | 11 mins | 8 mins |
| | 15 kVA (13.5kW) | AL3C0NHWGNNXLKB | 3 | 33 mins | 17 mins | 11 mins | 8 mins |
| **AL4** | 5 kVA (4.5kW ) | AL4A0NHUGNNXLKB | 1 | 31 mins | 16 mins | 11 mins | 8 mins |
| | 10 kVA (9kW) | AL4B0NHVGNNXLKB | 2 | 32 mins | 17 mins | 11 mins | 8 mins |
| | 15 kVA (13.5kW) | AL4C0NHWGNNXLKB | 3 | 33 mins | 17 mins | 11 mins | 8 mins |
| | 20 kVA (18kW) | AL4D0NHXGNNXLKB | 4 | 33 mins | 17 mins | 11 mins | 8 mins |
| **AL5** | 5 kVA (4.5kW ) | AL5A0NHUGNNXLKB | 1 | 34 mins | 17 mins | 11 mins | 8 mins |
| | 10 kVA (9kW) | AL5B0NHVGNNXLKB | 2 | 35 mins | 18 mins | 11 mins | 8 mins |
| | 15 kVA (13.5kW) | AL5C0NHWGNNXLKB | 3 | 35 mins | 18 mins | 12 mins | 8 mins |
| **AL6** | 5 kVA (4.5kW ) | AL6A0NHUGNNXLKB | 1 | 34 mins | 17 mins | 11 mins | 8 mins |
| | 10 kVA (9kW) | AL6B0NHVGNNXLKB | 2 | 35 mins | 18 mins | 11 mins | 8 mins |
| | 15 kVA (13.5kW) | AL6C0NHWGNNXLKB | 3 | 35 mins | 18 mins | 12 mins | 8 mins |
| | 20 kVA (18kW) | AL6D0NHXGNNXLKB | 4 | 35 mins | 18 mins | 11 mins | 8 mins |

| | Standard catalog numbers | | | VRLA run-times | | | |
|---|---|---|---|---|---|---|---|
| **Frame** | **Power rating** | **VRLA Model #** | **# Battery strings** | **Run-time 25% Load** | **Run-time 50% Load** | **Run-time 75% Load** | **Run-time 100% Load** |
| **AS3** | 5 kVA (4.5kW ) | AS3A0NCUGNNXLKB | 1 | 31 mins | 14 mins | 8 mins | 5 mins |
| | 10 kVA (9kW) | AS3B0NCVGNNXLKB | 2 | 32 mins | 14 mins | 8 mins | 5 mins |
| | 15 kVA (13.5kW) | AS3C0NCWGNNXLKB | 3 | 34 mins | 14 mins | 8 mins | 5 mins |
| **AS4** | 5 kVA (4.5kW ) | AS4A0NCUGNNXLKB | 1 | 30 mins | 14 mins | 8 mins | 5 mins |
| | 10 kVA (9kW) | AS4B0NCVGNNXLKB | 2 | 32 mins | 14 mins | 8 mins | 5 mins |
| | 15 kVA (13.5kW) | AS4C0NCWGNNXLKB | 3 | 34 mins | 14 mins | 8 mins | 5 mins |
| | 20 kVA (18kW) | AS4D0NCXGNNXLKB | 4 | 34 mins | 14 mins | 8 mins | 5 mins |
| **AS5** | 5 kVA (4.5kW ) | AS5A0NCUGNNXLKB | 1 | 36 mins | 15 mins | 8 mins | 5 mins |
| | 10 kVA (9kW) | AS5B0NCVGNNXLKB | 2 | 37 mins | 15 mins | 8 mins | 5 mins |
| | 15 kVA (13.5kW) | AS5C0NCWGNNXLKB | 3 | 37 mins | 16mins | 8 mins | 5 mins |
| **AS6** | 5 kVA (4.5kW ) | AS6A0NCUGNNXLKB | 1 | 36 mins | 15 mins | 8 mins | 5 mins |
| | 10 kVA (9kW) | AS6B0NCVGNNXLKB | 2 | 37 mins | 15 mins | 8 mins | 5 mins |
| | 15 kVA (13.5kW) | AS6C0NCWGNNXLKB | 3 | 37 mins | 16mins | 8 mins | 5 mins |
| | 20 kVA (18kW) | AS6D0NCXGNNXLKB | 4 | 38 mins | 16mins | 8 mins | 5 mins |

## Weight

| **Frame** | **Power rating** | **Lithium-Ion Model #** | **Lithium UPS Unit Weight lbs.** | **Lithium UPS Shipping Weight lbs.** | **VRLA Model #** | **VRLA UPS Unit weight lbs.** | **VRLA UPS shipping weight lbs.** |
|---|---|---|---|---|---|---|---|
| **AL3/AS3** | 5 kVA (4.5kW ) | AL3A0NHUGNNXLKB | 551 | 591 | AS3A0NCUGNNXLKB | 605 | 645 |
| | 10 kVA (9kW) | AL3B0NHVGNNXLKB | 592 | 632 | AS3B0NCVGNNXLKB | 700 | 740 |
| | 15 kVA (13.5kW) | AL3C0NHWGNNXLKB | 633 | 673 | AS3C0NCWGNNXLKB | 795 | 835 |
| **AL4/AS4** | 5 kVA (4.5kW ) | AL4A0NHUGNNXLKB | 581 | 621 | AS4A0NCUGNNXLKB | 635 | 675 |
| | 10 kVA (9kW) | AL4B0NHVGNNXLKB | 622 | 662 | AS4B0NCVGNNXLKB | 730 | 770 |
| | 15 kVA (13.5kW) | AL4C0NHWGNNXLKB | 663 | 703 | AS4C0NCWGNNXLKB | 825 | 865 |
| | 20 kVA (18kW) | AL4D0NHXGNNXLKB | 704 | 744 | AS4D0NCXGNNXLKB | 920 | 960 |
| **AL5/AS5** | 5 kVA (4.5kW ) | AL5A0NHUGNNXLKB | 321 | 361 | AS5A0NCUGNNXLKB | 375 | 415 |
| | 10 kVA (9kW) | AL5B0NHVGNNXLKB | 362 | 402 | AS5B0NCVGNNXLKB | 470 | 510 |
| | 15 kVA (13.5kW) | AL5C0NHWGNNXLKB | 403 | 443 | AS5C0NCWGNNXLKB | 565 | 605 |
| **AL6/AS6** | 5 kVA (4.5kW ) | AL6A0NHUGNNXLKB | 361 | 401 | AS6A0NCUGNNXLKB | 415 | 455 |
| | 10 kVA (9kW) | AL6B0NHVGNNXLKB | 402 | 442 | AS6B0NCVGNNXLKB | 510 | 550 |
| | 15 kVA (13.5kW) | AL6C0NHWGNNXLKB | 443 | 483 | AS6C0NCWGNNXLKB | 605 | 645 |
| | 20 kVA (18kW) | AL6D0NHXGNNXLKB | 484 | 524 | AS6D0NCXGNNXLKB | 700 | 740 |


*3 Vertiv™ VR Racks and Vertiv™ Liebert® APS UPS AL6/AS6*

**Vertiv™ Liebert® APS UPS**

| | AL3/AS3 Series | AL4/AS4 Series | AL5/AS5 Series | AL6/AS6 Series |
|---|---|---|---|---|
| Description | 12-Bay, w/ Xfmr | 16-Bay, w/ Xfmr | 10-Bay, Transformer-free | 16-Bay, Transformer-free |
| Frame rating | 15 kVA / 13.5 kW | 20 kVA / 18 kW | 15 kVA / 13.5 kW | 20 kVA / 18kW |
| **Mechanical W x D X H** | | | | |
| Dimension in (mm) | 17 x 32 x 42<br>(440 x 800 x 1060) | 17 x 34 x 49<br>(440 x 850 x 1240) | 17 x 32 x 27<br>(440 x 800x 695) | 17 x 34 x 38<br>(440 x 850 x 970) |
| **Component weight (frame fully populated)** | | | | |
| Frame weight without power and battery modules (lbs) | 510 | 540 | 280 | 320 |
| Frame weight without power and battery modules shipping weight (lbs) | 550 | 580 | 320 | 360 |
| Power module (lbs) | 20 | 20 | 20 | 20 |
| Power module shipping weight (lbs) | 25 | 25 | 25 | 25 |
| Lithium battery string two battery modules (lbs) | 46.3 | 46.3 | 46.3 | 46.3 |
| Lithium battery string two battery modules shipping weight (lbs) | 54.9 | 54.9 | 54.9 | 54.9 |
| VRLA battery string two modules (lbs) | 75 | 75 | 75 | 75 |
| VRLA battery string two modules shipping weight (lbs) | 80 | 80 | 80 | 80 |
| Charger module | 15 | 15 | 15 | 15 |
| Charger module shipping weight (lbs) | 20 | 20 | 20 | 20 |
| **Environmental** | | | | |
| Operating temperature | 32°F - 104°F (0°C - 40°C) | | | |
| Relative humidity | 0 - 95%, non-condensing | | | |
| Altitude | 10,000ft (3,000m) @ 77°F (25°C) | | | |
| Efficiency | 88.5 AC - 89.9 AC | 88.6 AC - 89.7 AC | 90.4 AC - 91.0 AC | 90.0 AC - 91.0 AC |
| Nominal heat dissipation | 5528 BTU/Hr (max) | 7965 BTU/Hr (max) | 4904 BTU/Hr (max) | 6768 BTU/Hr (max) |
| **Input data** | | | | |
| Default input voltage | 208 VAC | 208 VAC | 208/120 VAC | 208/120 VAC |
| Configurable input voltage | 200/208/220/230/240 VAC | 200/208/220/230/240 VAC | 200/100, 208/120, 220/110, 230/115, 240/120 VAC | 200/100, 208/120, 220/110, 230/115, 240/120 VAC |
| Input power factor | > 0.99 | > 0.99 | > 0.99 | > 0.99 |
| Input frequency range | 40 Hz to 70 Hz auto-sensing | | | |
| **Recommended input protection circuit breaker** | | | | |
| Power Rating | 5 kVA (4.5kW )<br>10 kVA (9kW)<br>15 kVA (13.5kW) | 5 kVA (4.5kW )<br>10 kVA (9kW)<br>15 kVA (13.5kW)<br>20 kVA (18kW) | 5 kVA (4.5kW )<br>10 kVA (9kW)<br>15 kVA (13.5kW) | 5 kVA (4.5kW )<br>10 kVA (9kW)<br>15 kVA (13.5kW)<br>20 kVA (18kW) |
| Input Breaker Size | 50A<br>63A<br>100A | 50A<br>63A<br>100A<br>125A | 50A<br>63A<br>100A | 50A<br>63A<br>100A<br>125A |



**Vertiv™ Liebert® APS UPS**

| | AL3/AS3 Series | AL4/AS4 Series | AL5/AS5 Series | AL6/AS6 Series |
|---|---|---|---|---|
| **Output data** | | | | |
| Default output voltage | 120/208 VAC | 120/208 VAC | 120/208 VAC | 120/208 VAC |
| Configurable output voltage | 100/100/173/200, 110/110/190/220, 115/115/199/230, 120/120/208/240 VAC | 100/100/173/200, 110/110/190/220, 115/115/199/230, 120/120/208/240 VAC | 200/100, 208/120, 220/110, 230/115, 240/120 VAC | 200/100, 208/120, 220/110, 230/115, 240/120 VAC |
| Voltage regulation | ±3% | ±3% | ±3% | ±3% |
| Voltage stability (100% step load) | ±7% | ±7% | ±7% | ±7% |
| Voltage recovery time | ≤ 3%, linear load<br>≤ 7%, non-linear load | ≤ 3%, linear load<br>≤ 7%, non-linear load | ≤ 3%, linear load<br>≤ 5%, non-linear load | ≤ 3%, linear load<br>≤ 5%, non-linear load |
| Output frequency | 60Hz default; 50/60Hz user-configurable | | | |
| Output overload capability | < 104% continuous; 105% - 130% for 1 min; 131% - 150% for 10 sec; 151% - 200% for 1 sec;<br>> 201% for 250 msec | | | |
| **Input & Output Terminal** | | | | |
| Terminal Size & Torque (90°C copper wire) | Minimum - 6 AWG (16 mm²)<br>Maximum - 2/0 AWG (70 mm² )<br>Torque - 110 in-lb (12.43 Nm) | | Minimum - 6 AWG (16 mm²)<br>Maximum - 2 AWG (35 mm² )<br>Torque - 40 in-lb (4.52 Nm) | |
| **Compliance** | | | | |
| Conducted and radiated EMC levels | IEC/EN/AS 62040-2 Cat 2, CISPR22 Class A, FCC Part 15 Class A | | | |
| Compliant safety standards | IEC/EN/AS 62040-1:2008, UL 1778 5th Ed and CSA 22.2 No. 107.1 | | UL 1778 5th Ed and CSA 22.2 No. 107.1 | |
| Compliant immunity standards | IEC/EN/AS 61000-4-2, 3, 4, 5, 6 | | | |
| Environmental | WEEE and ROHS2 (6 by 6), REACH Compliant | | | |
| Lithium-ion battery module | UL 1973 3rd Ed | | | |
| **Lithium-ion battery module** | | | | |
| Battery capacity | 920 Wh per string @ 77°F (25°C) | | | |
| Backup time (full load) | 8 mins (for non-redundant system which has equal number of battery strings and power modules) | | | |
| Maximum charge current (full load) | Power module internal charger: 1.8A / Charger module: 10A | | | |
| Nominal voltage | 153.6VDC | 153.6VDC | 153.6VDC | 153.6VDC |
| Recharge time | < 4.5hrs. to 90% capacity (PM internal charger with 1:1 ratio of PM to Battery Strings) | | | |
| **VRLA battery module** | | | | |
| Battery capacity | 36W @ 15min-rate to 1.67V per cell @ 77°F (25°C) | | | |
| Backup time (full load) | 5 mins. (for non-redundant system which has equal number of battery strings and power modules) | | | |
| Maximum charge current (full load) | Power module internal charger: 1.8A / Charger module: 10A | | | |
| Nominal voltage | 144 VDC | 144 VDC | 144 VDC | 144 VDC |
| Recharge time | < 5hrs. to 90% capacity (PM internal charger with 1:1 ratio of PM to Battery Strings) | | | |

*Build-to-order systems are available, please contact your local Vertiv office for details.*

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