Vertiv™ Liebert® PPC PDU

400-1000 kVA

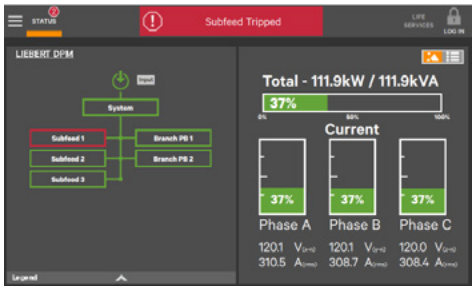
Efficient and reliable power distribution for your mission-critical applications.

Benefits

Vertiv™ Liebert® PPC offers reliable and flexible power configuration mainly aimed at colocation customers, supporting their IT infrastructure. Vertiv Liebert PPC 400- 1000kVA is a family of high-power density, transformer-based power distribution products.

Features and Benefits:

- Offers flexibility through a variety of distribution options with up to (8) 600AT or up to (4) 1000AT sub-feed breakers
- Available in 400/500/600/750 kVA as a standard offering and up to 1000 kVA as an engineer to order
- Supports multiple input/output voltage configurations: 208/120V; 400/231V; 415/240V
- Compact, space-saving footprint (60”W x 48”D x 85”H) allows for easier transportation/installation
- Front access design for better serviceability
- Copper (Cu) Transformer Windings/ Aluminum (Al) per requirement
- Top and Bottom cable entry/exit. Available for raised floor applications
- DOE 2016 compliant transformer maximizes energy efficiency
- Best-in-class power monitoring by Vertiv™ Liebert® DPM with intuitive 9” color touchscreen display



Vertiv™ Liebert® DPM- Waveform Capture Available

Power Distribution - done right!

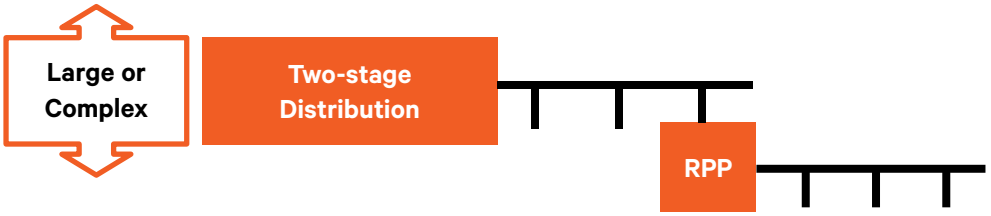
Vertiv™ Liebert® PPC has been enhanced to provide reliable uninterrupted power distribution to meet the growing demands of enterprise and colocation/hyperscale high density applications. Available standard ratings are aligned with the most common power building blocks in the industry. The Vertiv Liebert PPC is designed on a simplified, standardized and robust platform, ensuring design flexibility, easy deployment, and high-visibility monitoring.

The PDU is shipped to you with a custom configuration of sub-feeds, created for your specific site power requirements.

Key benefits of Vertiv™ Liebert® PPC

Vertiv Liebert PPC offers application-optimized selections aligned with the specific needs of today’s Data Centers. The unit is configured-to-order based on each customer/site needs and specifications.

Vertiv Liebert PPC with 400-1000kVA power distribution capacity serves as an ideal foundation to support larger implementations that may utilize a two-stage distribution strategy.



Vertiv offers the right solution to timely meet your Data Center's flexibility requirements

Vertiv™ Liebert® PPC unit is versatile and can be installed in both raised and non-raised floor applications. It provides cable entry/exit options from both the top and bottom.

Raised Floor

Raised floor in a data center provides virtually unlimited cabling and air flow capacity in the easy-to-access underfloor area. This is particularly beneficial for large power distribution units such as Vertiv™ Liebert® PPC that requires extensive cabling and airflow management. Modular raised flooring offers enhanced flexibility.

Non-Raised Floor

No raised floor? No worries! By placing the input and output conduit connections at the top of the unit, Vertiv™ Liebert® PPC brings the benefits of high-quality packaged power systems to non-raised floor applications. Plus, the unit retains the normal bottom output cable exit for easy relocation and expansion flexibility.

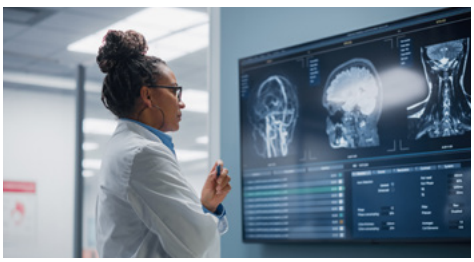
Vertiv™ Liebert® PPC is ideal for distributing power in various application areas:

Laboratories

Office Environments

Manufacturing Technology

Process Control Rooms



Medical Imaging Suites

Data Centers

Vertiv™ Liebert® PPC Features Display

Compact design: Space-saving unit requires minimal floor space and can be easily transported in datacenter facilities

Touchscreen control: 9-inch color LCD touchscreen for system programming and power monitoring with Liebert® DPM.

Easy maintenance access: Front access only for service, side access recommended for installation.

Custom configurations: Power configurations are made-to-order, according to your application demands.

Sub-feeds: The distribution section allows for installation of up to (8) 600 AT or (4) 1000 AT breakers, which are fed from the output of the transformer.

Product warranty: Comprehensive coverage through a standard exchange warranty. Fixed duration of 18 months (parts only) from product shipment date.

Distribution Topology
Up to 8x600AT or 4x1000AT Sub-Feed Breakers

Monitoring
DPM with internally or externally monitored breaker accessories

Breaker Accessories
Auxiliary Switch(s), Alarm Switch

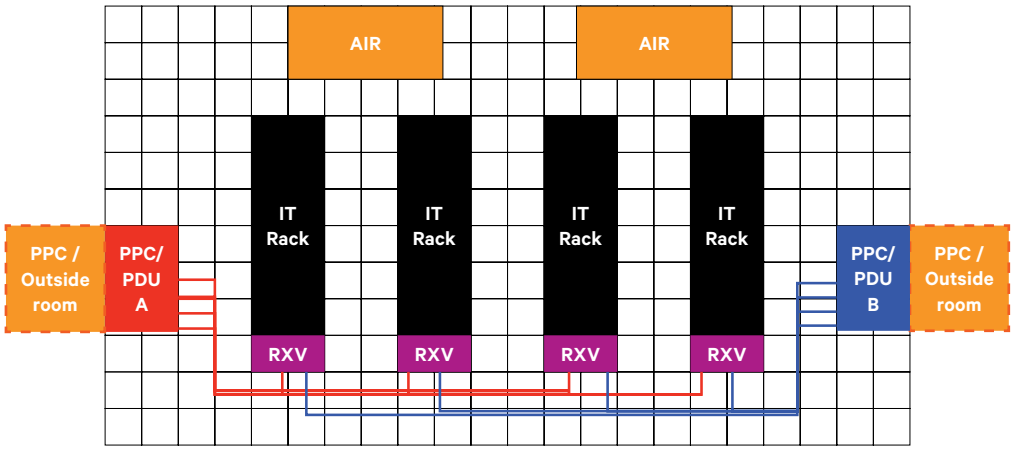
Access
Front access only for service, side access recommended for installation

Reliable and Flexible Power Distribution

Vertiv provides leading power distribution solutions across the entire power path, from the floor to the rack. The trend for larger sites has been to adopt two stage distribution that better supports the growing number of circuits in a data center.

Two Stage Distribution

Use breakers at the PDU to feed remote power panels or busway to the server racks. Reduces cable congestion and opens up space for more servers. Ideal for larger scale environments.



The Standard for Powering Critical Systems

Standard Features

- True Front access only design
- Convection cooled
- DOE 2016 TP-1 Listed isolation transformer
- Main Input CB
- Distribution Options –Sub-feeds Breakers
- Metering with 9” color touchscreen display
- UL62368 listed

Optional Features

- TVSS
- IR Windows for Thermal Scanning
- K-Rated transformers to withstand high harmonic loads without derating
- Sub-feed monitoring with <2% accuracy
- Multi-output voltage taps for ultimate flexibility

Benefits that make a difference

- Main input breaker with low-voltage shunt trip provides optional primary transformer overcurrent protection and control
- Higher efficiency than standard transformers
- Supplemental transformer protection guards from abnormally high-winding temperature
- Withstand neutral currents of at least 1.73 times full load safely
- Optional shielded output cables for each load reduce EMI and RFI

Vertiv™ Liebert® PPC 400 - 1000 kVA

Compact Design

Vertiv™ Liebert® PPC™ can be configured in various distribution configurations to meet specific application requirements for larger capacity demands. Each is optimized around key factors, such as footprint, flexibility & safety, while providing reliable power distribution.

Easy installation with Better Use of Space

- Compact PDUs allow you to maximize floor space
- Front-serviceable unit can be installed adjacent to walls, in corners, or alcoves
- Removable conduit plates (almost 3" on top) and 48" depth allows unit through doorways and on freight elevators
- Top and bottom wire input/exit accommodate both overhead and underfloor electrical conduit runs
- On-screen display allows for system programming and breaker configurations, as well export or import those configurations to other PDUs in the data center

Vertiv™ Liebert® PPC – 400-1000kVA

60" W

48"D

Top and Bottom entry/exit

Monitoring That's Meaningful

The Vertiv™ Liebert® PPC PDU features an intelligent power monitoring system, Vertiv™ Liebert® DPM. The DPM includes a user interface monitor mounted on the front door of the Vertiv Liebert PPC. This intelligent system provides one-line system overview, individual breaker status, and equipment load levels. This monitor features a 9-inch color LCD display touchscreen panel, an audible alarm, and an EPO push button. The monitored parameters and alarms displayed on the local display are available.

Vertiv™ Liebert® PPC 400-1000kVA

At left is a "single-line," an electrical diagram of the PDU unit, showing the input, the transformer, and the output distribution of branch panelboards and subfeed breakers. At right is the PDU's total, including voltage and amperage for each phase. output load, with individual power levels for each phase in a 3-phase distribution.

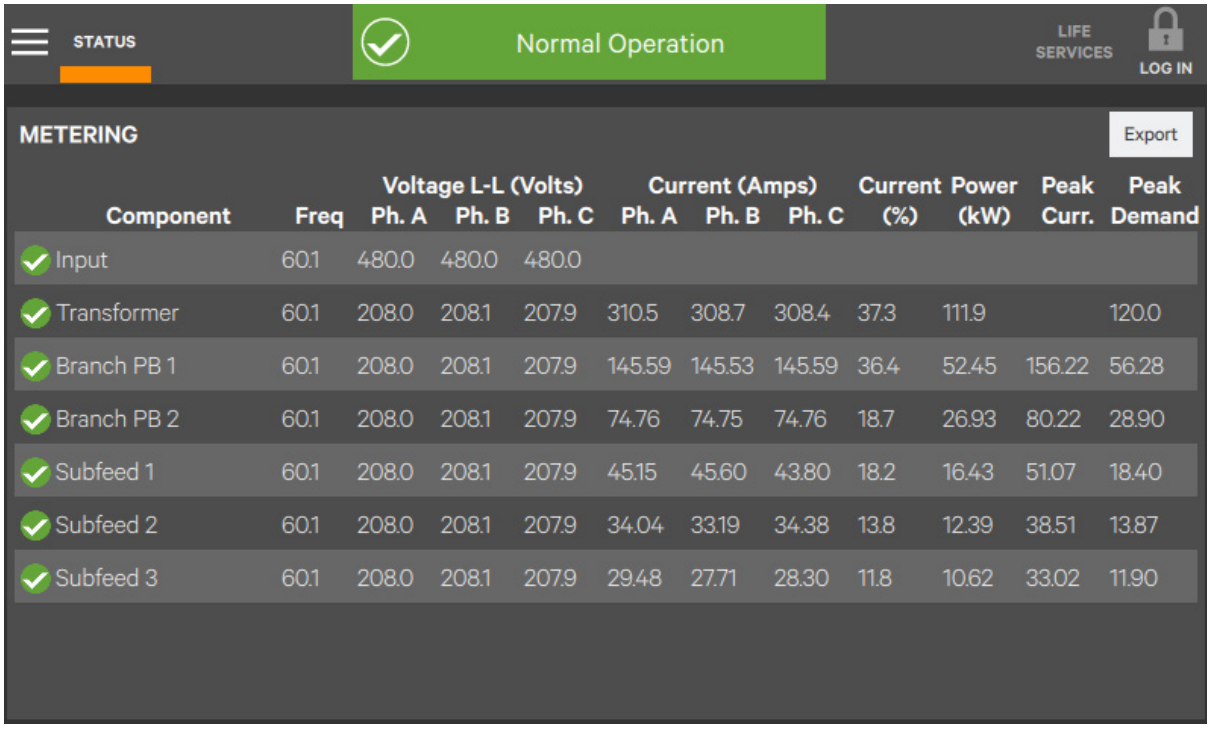
Benefits

- User-friendly graphical interface
- Single-line mimic diagram showing real-time system status. Easily identify root cause of power quality issues or outages
- Unit monitors power usage for billing or cost allocation
- Automatic charting display for logged power and environmental data
- Power monitoring system allows management of equipment loads on local and remote facilities
- Automatic warnings of near overload conditions
- Optional local and remote Emergency Power-Off

- 9-Inch Touchscreen Display
- Breaker Accessory Monitoring
- Alarm Annunciation
- On-Screen Programming
- Waveform Capture
- Transformer in/out

Vertiv™ Liebert® DPM Distribution Power Monitoring

DPM Observer Metering Screen



Component	Freq	Voltage L-L (Volts) Ph. A	Ph. B	Ph. C	Current (Amps) Ph. A	Ph. B	Ph. C	Current (%)	Power (kW)	Peak Curr.	Peak Demand
Input	60.1	480.0	480.0	480.0							
Transformer	60.1	208.0	208.1	207.9	310.5	308.7	308.4	37.3	111.9		120.0
Branch PB 1	60.1	208.0	208.1	207.9	145.59	145.53	145.59	36.4	52.45	156.22	56.28
Branch PB 2	60.1	208.0	208.1	207.9	74.76	74.75	74.76	18.7	26.93	80.22	28.90
Subfeed 1	60.1	208.0	208.1	207.9	45.15	45.60	43.80	18.2	16.43	51.07	18.40
Subfeed 2	60.1	208.0	208.1	207.9	34.04	33.19	34.38	13.8	12.39	38.51	13.87
Subfeed 3	60.1	208.0	208.1	207.9	29.48	27.71	28.30	11.8	10.62	33.02	11.90

Figure 2 shows the Metering display screen, which gives summary of the equipment load levels for each component of the PDU unit, including the power input. Using the touchscreen display, you can tap on any of the components in the list and receive more detailed power distribution information for that component.

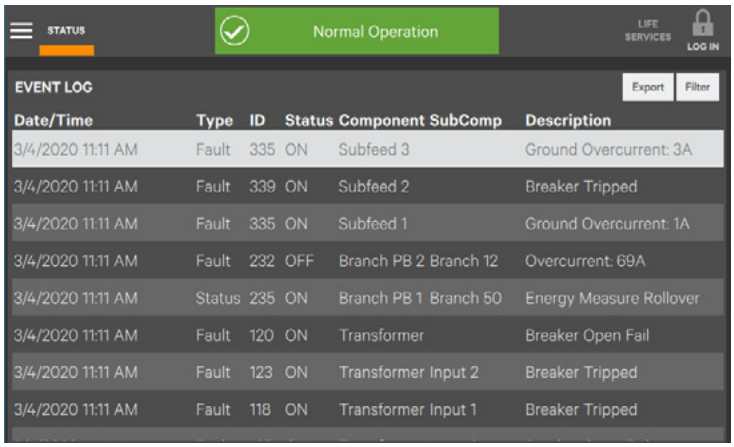


Figure 3 shows the Event Log, which gives brief summaries of power events that have occurred in the unit, with the component, date, and time of those events.

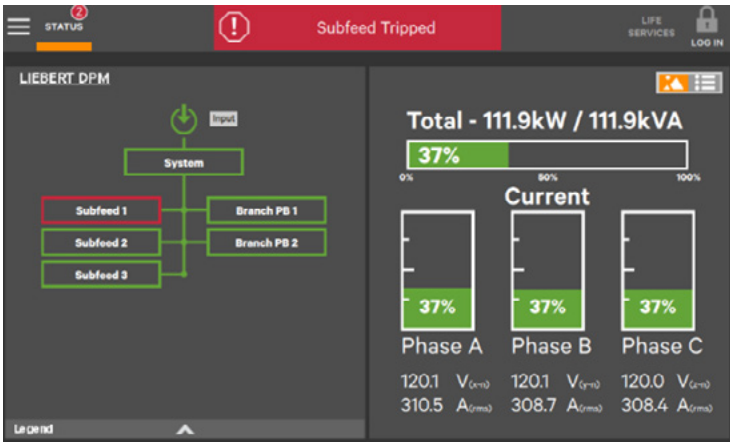


Figure 4 shows the Intuitive Interface—the LED bar, Status bar, and One Line diagram provides simple color-coded alarms and faults, with Green for normal, Amber for warning, and Red for critical. Each component of the single line diagram can be selected to view specific metering data, events, and configured settings, which allows powerful insight at a glance.

Technical Specifications

Electrical

kVA Rating	Available in 400/500/600/750 kVA as a standard offering and up to 1000 kVA as an engineer to order
Input	3-phase, 3-wire plus ground
Input Voltage	@60Hz, 480V (Standard) / 600V (Optional)
Output	3-phase, 4-wire plus ground
Output Voltage	@60Hz: 415/240V, 208/120V
Agency listed to	UL62638; FCC part 15B for EMI and ANSI/IEEE C62.41 (when surge devices installed)

Operating Conditions

Operating Temperature	0 to 40°C
Storage Temperature	-20 to 55°C
Audible Noise	Meets NEMA ST-20 standard
Relative Humidity	0 to 90% non-condensing
Altitude	up to 6,600ft

Transformer

Meets DOE2016 standard	Yes
Transformer Ratings available in	K4 (Standard), K13 and K20 (Optional)
Transformer Material Type	Copper (Cu) and Aluminum (Al)
Neutral conductor rating	200%
Temp Rise options	150°C (Standard), 115°C (Optional)

Vertiv transformers have been designed and built by Vertiv in our world-class manufacturing facility for over 40 years

Monitoring

Monitoring Configurations	Monitoring at the System level (Input and Output) Monitoring down to the branch circuit level (BCMS)
Display	9.0" Color touchscreen
Measured Values	Voltage, Current, Power Factor, Energy, Harmonics
Protocols	Modbus TCP, SNMP, BACnet IP or MSTP, Modbus/RTU, SMS, Email, HTTP/HTTPS and Vertiv Protocol
Environmental sensor enabled through same protocols	

Physical

Dimensions	60"W × 48"D × 85"H
Unit Weight, lb. (kg)	400kVA- 5207(2362); 500kVA- 5842 (2650); 600kVA- 5998 (2721); 750kVA-7119 (3229)
Shipping Weight, lb. (kg)	400kVA- 5349(2427); 500kVA- 5984(2715); 600kVA- 6140(2786); 750kVA-7261(3294)

Critical Systems, Critical Care / Additional Services for Added Protection

Preventative and Emergency Support

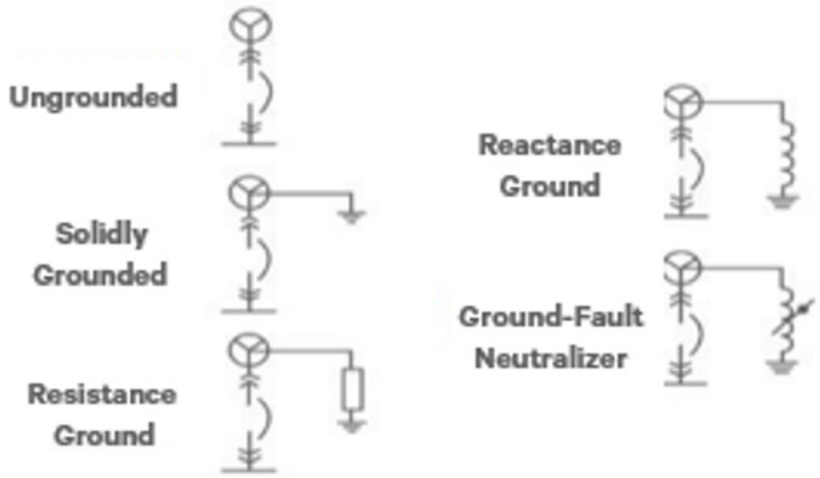
Maximizing the performance and efficiency of your data center's uninterruptible power supply (UPS) and other power distribution systems requires systems be properly maintained by factory-trained technicians. Trust Vertiv™ Services to take your critical maintenance to the next level- proactive maintenance that can significantly extend the life of your power systems, decrease your capital investment, optimize system efficiency and effectiveness, and increase overall system availability.

- 24x7 critical maintenance response
- Proactive service, extends system life
- Improved MTBF and MTTR
- Local factory trained engineers ready to respond
- Parts, expertise, satisfaction

Grounding Studies

A grounding system is one of the most important, yet neglected, segments of a critical facility's electrical power system. Testing it is not only prudent, it is required by the National Electrical Code. Grounding studies ensure protection from low-level arcing ground faults that can destroy your switchgear in seconds and put personnel in danger. Vertiv's grounding studies include the required tests and inspections needed to verify your system's integrity.

Types of Grounding Systems



Full Range Power Distribution

For all your floor or rack mounted power distribution needs, remember that Vertiv has many innovative and effective solutions. Shown are a few examples.

Vertiv™ Liebert® **RXV RPP** with panelboard or branch circuit level monitoring can be used in 1–4-unit space-saving blocks.

Vertiv rack PDUs are available in basic, metered, monitored or switched models.

Warranty Information

Vertiv™ Liebert® Three-Phase AC Power Products: A fixed duration of 18 months (parts only) from product shipment date. Product shipment date is determined only from the bill of lading.

If any part or portion of the Vertiv product fails to conform to the warranty within the warranty period, Vertiv, at its option, will furnish new or factory remanufactured products for repair or replacement of that failed portion or part. Repair or replacement of a defective product or part thereof does not extend or restart the original warranty period. Vertiv does not control the use of any product and, accordingly, materials classified as "descriptions" are not warranties of performance and not warranties of fitness for a particular purpose.

Power-Packed Testing Center Proves Business-Critical Reliability

The Vertiv™ Power Test Center for large power systems is a state-of-the-art test facility designed to provide customers with pre-installation testing of the performance, interoperability, and efficiency of Vertiv power modules and systems under a variety of conditions. Located in Delaware, Ohio, the 41,000 square-foot facility, including a 2,600 square-foot customer observation suite, is the largest and most comprehensive in the industry.

Testing includes individual UPS modules as well as the complete power system—including large UPS units and associated switchgear, power distribution and ancillary products—and is essential to the smooth, rapid installation and commissioning of large power systems. Customers leave the Power Test Center with documented test results and confidence that their complex power system will operate seamlessly and in accordance with business-critical availability requirements.

Test results certify the input and output, AC and DC characteristics of the system. Performance comparisons against specifications include, but are not limited to:

- Voltage and waveform
- Voltage regulation
- Voltage and current harmonics
- Frequency
- Current and Waveform
- I/O power factor
- Efficiency based on kW in and out
- Monitoring functionality

Customers may request special tests in addition to the above.

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