VERTIV.

Liebert® PPC

Packaged Power Distribution
for higher power quality

FEATURES

- **Computer-grade grounding -** the Vertiv PPC automatically establishes a single point ground to meet grounding requirement major Manufacturers' recommendations and the requirements of the National Electric Code.
- **Handles non-linear loads -** fully compatible with the non-linear loads of modern computer systems and other electronic equipment.
- **Monitoring -** built-in metering and alarm annunciation with communication to Vertiv centralized monitoring & modbus for third party monitoring.
- **Space savings -** compact single cabinet conserves valuable floor space.
- **Easy installation -** single input cable connection reduces installation time and cost.
- **Location flexibility -** the unit can be easily relocated to protect your investment.

Liebert® delivers the packaged power solution

Liebert® Precision Power Center is an affordable and reliable packaged Power management for a variety of applications, including computer rooms, LANS/WANS, communication facilities and manufacturing units.

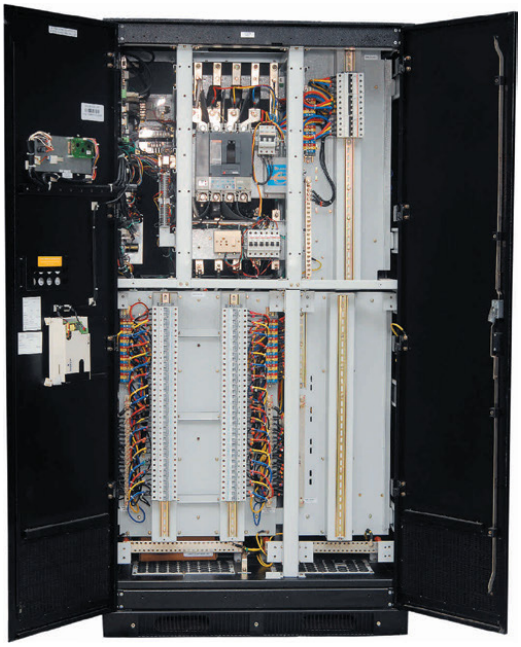
Creating high quality power is a major step towards protecting the operation of a critical facility. But don't stop there. Once you've created a better level of power, you need to make sure that it can be distributed properly to each piece of important equipment

Critical power distribution made easy

This is why Liebert® designed the Precision Power Center (PPC) to bring you a distribution system that will close the power delivery loop in your critical facility. Liebert PPC offers the benefits of a custom-tailored power system, with the convenience and cost savings of a pre-packaged, factory-tested unit. Housed in a single, self- contained cabinet, it combines distribution, computer-grade grounding and power monitoring to provide the protection your vital computer or communications equipment demands. Available In 50-300 kVA capacity systems. The PPC offers flexible expansion capabilities to fit growing sites.

A proven system

The packaged system approach of the Vertiv PPC is convenient and space-saving, reducing installation time and cost compared to a conventional approach using multiple interconnected components. The Vertiv PPC is built on a proven system design used in thousands of Installations, and unlike the one-of-a-kind, built-up distribution constructed at the site, it undergoes thorough factory testing as a complete system to assure reliable consistent performance.

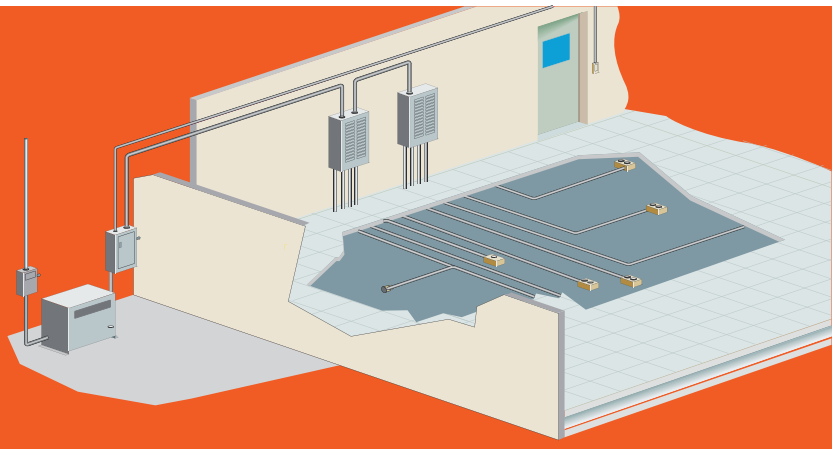


An all-in-one power system ... all at an affordable price

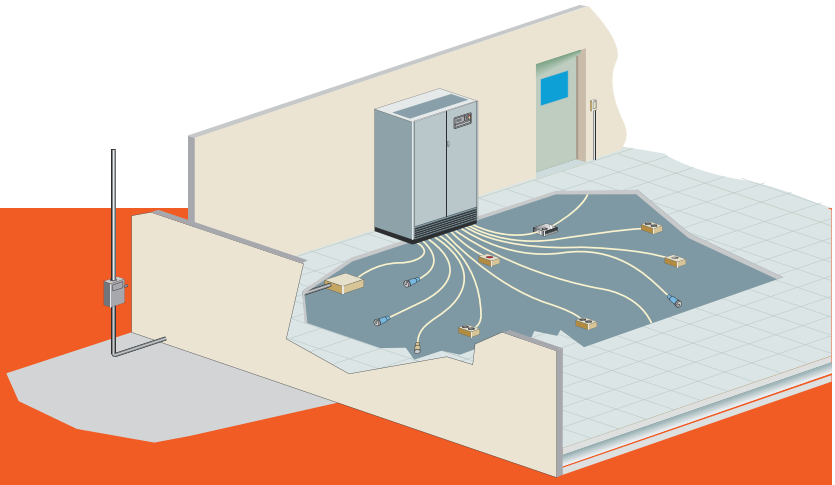
A noticeable improvement in power quality

There are a number of integral features that allow Liebert® Precision Power Centers to offer a higher quality level of electrical power for your critical applications

- The main input breaker with low voltage shunt trip accessory provides primary transformer over current protection, a powER disconnecting means, and a method to interface with shutdown controls.
- Minimum 42 pole output breaker and individual isolated neutral and ground bus bars distribute power to the sensitive load equipment
- Oversized neutral components safely withstand neutral currents of least 1.73 times full load currents.
- System shutdown controls, including manual restart, over temperature shutdown and emergency power o, are included.
- Supplemental transformer protection is provided by temperature sensors in each winding to alarm abnormally high winding temperature or shutdown unit before isolation damage.
- Soft start available.
- Option of K1, K13, K20 transformer safely withstands high harmonic currents associated with electronic loads without derating.



A conventional power distribution system configured and installed at the site typically requires more wiring and connection materials, more components, larger wire sizes and greater service clearance. The result is a longer installation time, larger installed footprint, higher costs and an inflexible system.



The Liebert® packaged approach gives you an easily installed package — a single power connection to the building wiring simplifies hook-up and reduces installation time and cost. Flexible cables can be specified in lengths and sizes to match sensitive electronic loads, making the system easy to relocate or expand. A choice of service access allows greater location flexibility and smaller installed footprint. And since the power source is right there in the room, it eliminates diiculties in establishing a proper ground. The system also eliminates potentially harmful harmonic neutral current from the building wiring system.

Designed from the ground up for effective power distribution

Several key features have allowed Vertiv to build a packaged power distribution system that combines a high level of power quality eectiveness with a cost that is less than conventional built-up systems.

Computer grade grounding

The Vertiv Precision Power Center establishes a single point ground for the critical load. Power ground and computer ground points are identical minimizing ground-loop currents and common mode disturbances. Short output cables maintain the integrity of the isolation and conditioning.

Secure distribution and circuit identification

Distribution panels are in the computer room which limits access to authorized personnel only. Each breaker has an adjacent identification tag for rapid circuit ID. Each output cable is labeled at each end with circuit number, length, type of receptacle and circuit identification.

Non-linear load compatibility

The basic Vertiv PPC is designed to accommodate moderate levels of harmonic currents. Where severe levels of harmonic currents are anticipated, K-Factor transformers, and multi-output transformers options for harmonic current cancellation are available.

On-site power monitoring

The integral power monitoring panel provides comprehensive metering and alarms for system Power parameters. Monitoring features include: True RMS measurements

- Auto scan of all parameters
- Adjustable alarm thresholds
- Programmable custom alarms
- Battery-backed alarm memory
- Summary alarm contact

Central monitoring interface

Vertiv Precision Power Centers are compatible with our SiteScan centralized monitoring systems, allowing single point monitoring and alarm of power conditions. These microprocessor-based systems provide historical data on room conditions for future requirement Planning and troubleshooting. In addition, an isolated RS-232 ASCII port is provided for communication of monitored parameters and alarm information to other monitoring systems. OpenComms WEB interface card can also be used to enable cost-effective monitoring of a Vertiv PPC by your facility or network monitoring system.

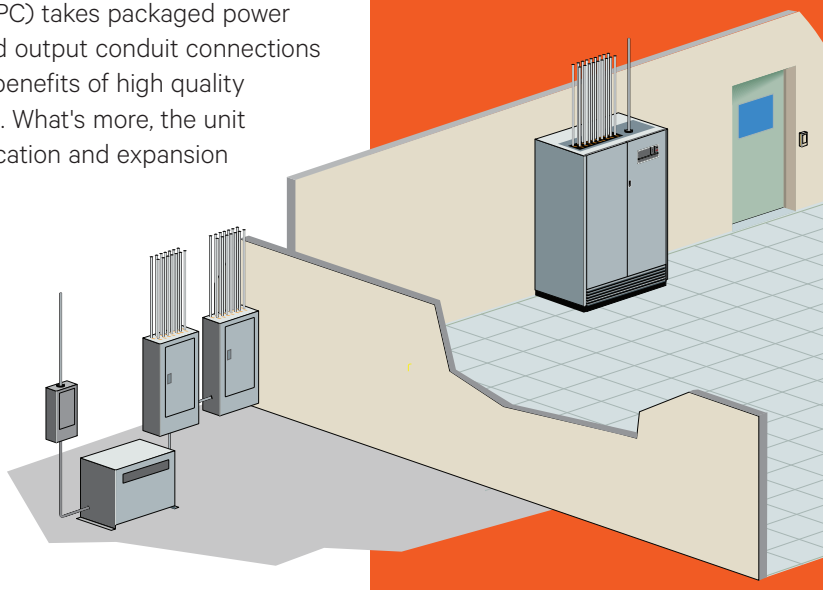
Optional system enhancements

A host of options enable you to design the Vertiv packaged power system to your exact needs:

- Transient voltage surge suppression (TVSS) is available for increased protection from damaging voltage surges. Very short interconnecting wiring provides superior surge clamping performance.
- BCMS for monitoring each individual branch output
- IS-Web card for web and SNMP
- IS-485 Card for Modbus over RS485
- IS-IPBMS Card for Modbus over TCP/IP

Raising the standard of power in non-raised floor application

The innovative top-exit Vertiv Precision Power Center (PPC) takes packaged power systems to new heights... literally. By placing the input and output conduit connections at the top of the unit, the top-exit Vertiv PPC brings the benefits of high quality packaged power systems to non-raised floor applications. What's more, the unit retains the normal bottom output cable exit for easy relocation and expansion flexibility.



Added flexibility enables you to bring packaged power to even more locations

Ideal for conditioned grade power distribution in applications where there is no raised floor, the top-exit Liebert® PPC brings the flexibility and space-saving benefits of a packaged power system to a variety of applications:

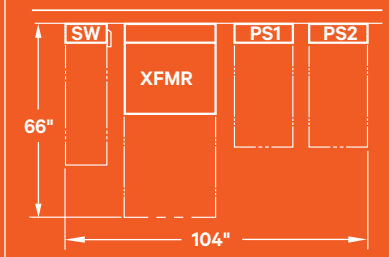
- Office areas
- LANS
- Laboratories
- High-tech manufacturing sites
- Process control rooms
- Medical imaging suites
- Grouped workstations

Features and specifications

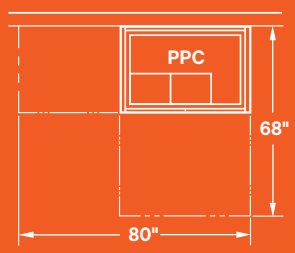
- **Ground:** Single point reference on separately derived system
- **Distribution:** Individually protected 125 Amps panel board with din rail mounted on breaker and flexible output cables
- **Cooling system:** convection / forced
- **Monitored parameters for main I/P Breaker:** I/P Voltages; Neutral & ground currents; voltage THD crest factor; kVA kW; PF; % load; kW Hrs; frequency; o/p current THD
- **Efficiency:** (96-98%) with transformer >99% transformer less system
- **Voltage Adjustment:** +2.5% of nominal in 2½% increments
- **KVA:** 50-300 kVA, 3 phase
- **Input:** 3-phase 3-wire plus ground 380, 400 or 415 volts: 50 Hz (Transformer less system require 3-phase, 4w & G)
- **Output:** 3-phase, 4-wire plus ground & 1 phase, 2 wire plus ground 220/380, 230/400 or 240/415 volts: 50 Hz
- **Alarm condition:** Transformer o/p over & under voltages; o/p overload; neutral and ground over currents; o/p voltage THD; Transformers over temperature; frequency deviation; phase sequence error; 5 customer specified alarm conditions.

High efficiency power distribution in far less space

Compared to a conventional power distribution system built at the site and using multiple interconnected components, the top-exit Liebert® PPC provides a much smaller footprint, reduced installation time, less cost and easier service access.



Conventional System = 47.7 Sq. Ft.

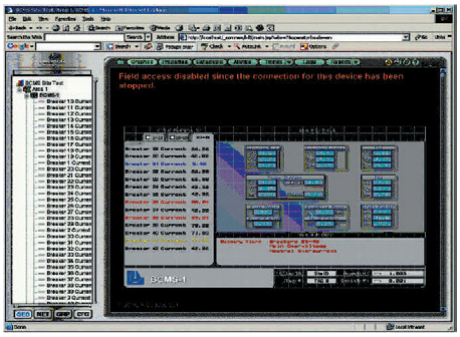


PPC = 37.8 Sq. Ft.

Monitored parameters & alarms for main I/P breaker

Parameters

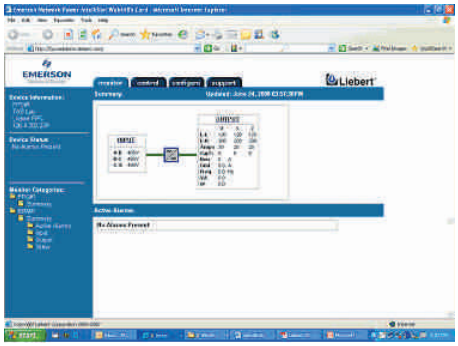
- Monitored on local lcd display
- Input volts, l-l*
- Output volts, l-l & l-n, each phase*
- Output voltage thd, each phase
- Output current, each phase, n & g*
- Output current thd, each phase
- Output current crest factor, each phase
- Output kva, kw & load%*
- Output pf
- Output frequency*
- Output kw-hrs
- Output k-factor, each phase
- Time and date



Local Branch Monitoring

Alarms

- Output over & undervoltage*
- Output overload
- Output overcurrent*
- Neutral overcurrent
- Ground overcurrent*
- Output voltage distortion (thd)
- Frequency deviation*
- Transformer overtemp*
- Phase sequence error*
- 5 Customer specified alarms*



Web Monitoring

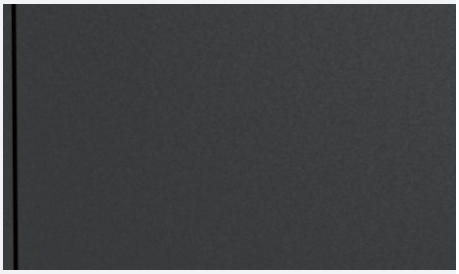
***Note:** Modbus & web monitoring of marked parameters & alarms are available

Monitored parameters & alarms for each branch breaker

Parameters
Current, load%, kw, kw-hrs

Alarms
Branch circuits : over current
2 Levels, low current.

***Note:** Modbus monitoring for all parameters & alarms are available



Technical Specifications

Rated Power	50	75	100	125	150	200	225	250	300
Electrical parameters									
Rated Input Mains Voltage[1]	380 - 400 - 415 Vac								
Input Supply	Three phase, 3 wire and Ground								
Input voltage tolerance	± 10 %								
Frequency	50/60Hz								
Input frequency tolerance	± 5 %								
Output Supply	Three phase or Single phase								
Rated Output Voltage[2]	220/380 - 230/400 - 240/415 Vac								
Environmental parameters									
Operating Temperature	0 to 40°C, (average 35°C max)								
Relative Humidity	90% at 31°C								
Altitude of operation	1000m above sea level								
Storage/ transport temperature	-25 to 70°C								
Mechanical parameters									
Height	With transformer	2000mm							
	Without transformer								
Width	With transformer	900mm			1200mm				
	Without transformer	600mm			1000mm				
Depth	With transformer	1050mm							
	Without transformer	600mm							
Colour	Structured Black, Epoxy Polyester								
Cooling	By Internal Intake Fans								
Cable Entry / Exit	Outgoing cables = Bottom side; Incoming cables = Top & Bottom side								
Protection grade	IP 20								

** 1. 380V, 400V or 415V is to configured by software.*
2. Rated output voltage is as per input mains voltage.
3. Specification are subject to change without any prior notification

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