

POWER WHEN AND WHERE YOU NEED IT

Producing quality power is the first step—getting it to critical equipment in the most efficient manner while maintaining proper voltages and other key parameters is the important next step.

Making Sure The Power Is Always There When You Need It

Liebert's range of power distribution equipment is specially designed for high-availability applications. It includes both distribution and switching systems to provide reliable power to critical loads.

Liebert Power Distribution Solutions Are Ideal For

- Large-Scale Computer Centers
- Facility-Wide Networks
- Large-Scale Telecommunications Centers
- Colocation Facilities
- Internet Data Centers
- Server Farms
- Data Warehouses
- Network Management Centers
- Medical Imaging Equipment
- Test and Laboratory Facilities
- Industrial Process Control Operations

LIEBERT FDC

As your rack-based systems grow in number, complexity and criticality — so must your power distribution system. To meet this challenge Liebert has created a product designed to optimize power distribution at the rack level with the “plug and play” flexibility that today's IT managers demand from their systems. The Liebert FDC distribution cabinet extends the functionality of the PDU by packaging 168 poles in a stand-alone cabinet with a rack foot print. Any compartment can be serviced or reconfigured without exposing the wiring of the other three panelboards.



The standard Liebert FDC unit includes:

- 4 complete panelboards with main breaker (total 168 poles).
- Front and rear access only.
- Bottom cable exit.

Optional features include:

- Top cable exit.
- 22kAIC main panelboard breakers.
- Enhanced monitoring with remote communications — Modbus output.
- Isolated ground bus bars.
- EZ-view doors enable visual inspection of the breakers without unlocking the cabinet.
- Square D or GE inline panelboards in bolt-in or plug-in styles.
- Current monitoring panel.
- Tie-breakers to allow connection of two panelboards to a common panelboard main breaker (requires side access).
- Plug-in main panelboard breakers.



LIEBERT REMOTE DISTRIBUTION CABINET (RDC) THE BETTER WAY TO WIRE HIGH DENSITY FACILITIES

The influx of client/server rack equipment is changing the content of data centers. There are more devices than before—and they consume less power than their predecessors. As a result, most power distribution units (PDUs) run out of circuit breaker poles before they run out of rated capacity. The Liebert Remote Distribution Cabinet (RDC) extends the functionality of the PDU by packaging 168 poles (four complete **42-pole inline** panelboards) in a stand-alone cabinet.

Unlike standard Liebert Precision Power Centers (PPCs), the RDC has no internal isolation transformer and requires 4-wire-plus-ground input from a PPC or other transformer. By separating the PPC transformer from the panelboard function, Liebert was able to create an extremely compact package that fits the area of a standard 24" x 24" raised-floor tile.

The individual panelboards inside the Liebert Remote Distribution Cabinet can receive power from different sources. This enables the RDC to provide fault-tolerant, fully maintainable dual-bus power to nearby load equipment. A dual-input RDC can be configured with two panelboards on each side sharing common input terminals.

Other Features Of The Liebert RDC:

- Unobstructed wiring access for ease of installation
- Complete isolation and maintainability
- Optional clear door insert panels enabling visual inspection of the breakers without unlocking the cabinet
- Optional adjustable accent panels to make it easier to compensate for breaker "creep"
- Single, dual or four-input configurations
- Optional current monitoring panel
- Optional input junction box and underfloor conduit box
- UL and CE compliant and labeled



Conduit-landing plate, above, is positioned for easy cable access. Underfloor junction, inset, above right, is standard for 4-input models and optional for others.

LIEBERT PRECISION POWER CENTER — LIEBERT PPC LIEBERT FPC

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PACKAGED POWER DISTRIBUTION FOR HIGHER POWER QUALITY

Liebert Precision Power Center

The Liebert Precision Power Center (PPC) power conditioning and distribution cabinet is designed to bring you a distribution system that 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, isolation, and power monitoring to provide the protection your vital computer or communications equipment demands. Available in 15-225 kVA capacity systems for raised floor applications and 15-150 kVA capacities in top-exit models for non-raised floors, the Liebert PPC offers flexible expansion capabilities to fit growing sites.

The packaged system concept of the Liebert PPC is convenient and space-saving, reducing installation time and cost compared to a conventional approach using multiple interconnected components.

Other Standard Features Of The Liebert Precision Power Center:

- Secure distribution and circuit identification
- Non-linear load compatibility
- Individual circuit breaker protection
- Built-in metering and alarm annunciation, with communication to Liebert-centralized monitoring systems
- Easy installation, with single input cable connection and application matched connections to the load
- Expandable with add-on panelboards and flexible cabling
- Flexibility to protect your investment by allowing the unit to be easily relocated
- UL and CSA Listed as a complete system

Liebert FPC

The Liebert FPC power conditioning and distribution cabinet provides higher quality, more flexible power distribution for high-density data centers. It is engineered to combine the convenience and cost savings of a pre-packaged, factory-tested unit with the flexibility of a custom-tailored power system. This self-contained system provides power isolation, power distribution, computer-grade grounding and power monitoring.

Ranging in capacity from 15kVA up to 300kVA, the Liebert FPC comes in a 19" rack and 47" wide rack, the size of two 19" racks, and is designed to fit at the end of, or within, a row of racks, as well as in a standalone configuration.

The packaged system approach of the Liebert FPC is convenient and space-saving, reducing installation time and cost compared to a conventional approach using multiple interconnected components.

Other Standard Features Of The Liebert FPC:

- Computer-grade grounding
- Fully compatible with the non-linear loads
- Main input breaker with shunt trip
- Double-shielded isolation transformer
- One or more individually enclosed 42-pole output panelboards
- Built-in metering and alarm annunciation with communication to Liebert centralized monitoring
- Compact single cabinet conserves valuable floor space
- Single input cable connection reduces installation time and cost
- Full front and rear access
- Can be easily relocated to protect your investment
- UL and ULc Listed as a complete system



Liebert Power Monitoring Capabilities

The operation of the Liebert Precision Power Center and Liebert FPC can be monitored using

- Liebert Nform™ Monitoring System
- Liebert SiteScan® Web Comprehensive Facility Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems

For more information, see pages 42 and 43.

LIEBERT SMARTSWITCH®

A SWITCHING SOLUTION FOR RELIABLE, REDUNDANT AC POWER

A Convenient Point-Of-Use Transfer Switch For A Variety Of Applications Requiring Reliable Dual AC Switching,

If your critical electronic equipment requires the reliability and continuous operation provided by dual power sources—without tolerance for even scheduled downtime—Liebert has the solution. The Liebert SmartSwitch is a convenient point-of-use transfer switch that provides rapid switching between two independent AC power sources, for uninterrupted operation of critical electronic equipment.

It automatically transfers from the failing power source to the alternate source immediately upon detection of a problem—typically within six milliseconds. The proven power switching technology of Liebert SmartSwitch allows dual AC power paths all the way up to the critical load for the ultimate in AC power system redundancy, power availability and fault tolerance.

Other Features Of The Liebert SmartSwitch:

- Fast switching between two AC power sources makes power transfer time invisible to your protected equipment
- Manual and automatic transfer capability
- Selectable preferred input source without rewiring or load shutdown provides application flexibility and facilitates load balancing
- Integral maintenance bypass to both input sources for servicing convenience
- Hot-swap electronics allow module replacement without load shutdown
- Switched neutrals maintain isolation of the separate power sources and simplify grounding
- Break-Before-Make switching eliminates connecting together of the independent power sources, even under faulted conditions
- Diagnostics and transfer tests detect potential switch failures before the problem becomes critical
- Output receptacles are available to match your load specifications, simplifying system installation
- The enclosure may be placed under a raised floor, mounted on a wall or used in a rack, based on your site needs
- ETL Listed to UL Standard 1008 for safety
- CE marked, complies with EMC and low voltage directives



Liebert SmartSwitch includes manual transfer test capability to assure continued proper operation.

The unit is available with your choice of receptacles and connector, simplifying installation and setup.

LED indicators provide at-a-glance operating status. Eight output contacts are available for remote status indication. RS232 ASCII communications port allows setpoint control and remote monitoring.

Hot swappable electronics module and bypass feature allow your protected equipment to remain up and running, even when the SmartSwitch is being serviced.

Liebert Power Monitoring Capabilities

The operation of the Liebert SmartSwitch can be monitored using

- Liebert Universal Monitor and Remote Power Monitor Panels

For more information, see pages 42 and 43.

LIEBERT STATIC TRANSFER SWITCH2™

THE KEY TO HIGH-AVAILABILITY POWER

The Liebert Static Transfer Switch2 (STS 2) provides an automatic, seamless transfer between the outputs of two independent UPS systems and the input of a critical load in a dual-bus power system. If the primary UPS should fail, the switch will automatically transfer the loads to the surviving UPS. For redundancy, the Liebert STS2 features three separate, self-correcting logic modules. Each controller is capable of working independently and each helps monitor the other two. Available in capacities ranging from 100 up to 1000 amps.

True Front-Access Design

All mechanical and electronic components of the Liebert STS2 are accessible from the front of the unit. This gives you several immediate benefits:

- Greater freedom in system design. The Liebert STS2 can be placed adjacent to or in back of other equipment. It can also be placed against a wall or partition.
- Simplified installation, with ample space for cable connections through top and bottom access plates
- Less floor space required for maintenance access.
- Simplified maintenance, with all key components visible, serviceable and removable from the front of the unit, without the need to shut down the connected load.

True Internal Redundancy

The Liebert STS2 has triple-redundant logic. Each DSP controller is capable of working independently, and each helps monitor the other two. If one malfunctions, the other two lock it out. Each controller has power feeds from both power supplies.

The two power supplies feature true dual-bus power distribution. Both have dual inputs, one from each AC input source. All power connections have diode protection, so that internal or external faults cannot propagate. The result is a rugged, fault-resilient package that is optimized for real-world applications.

Other Features Of The Liebert Static Transfer Switch2:

- Internal CANBUS protocol provides high-bandwidth communication between system components via twisted-pair cables. Options can be added as simple network nodes
- Internal dual-bus control power
- Simplified installation and maintenance
- Full range of communications options to fit any monitoring strategy
- Three-pole switch configurations

Easy-To-Use Color Touch-Screen Interface

The controls of the Liebert STS2 are intuitive and simple. The pop-up menus are easy to understand and provide a wealth of operational and diagnostic information.

The color LCD monitor is divided into three segments. In addition to a system mimic diagram, there is a status/alarm panel and a section dedicated to operator instructions and menus. You benefit from improved operator effectiveness, reduced training time, and less chance of operator error.



STS2/PDU COMBINES POWER DISTRIBUTION AND AUTOMATIC SWITCHING



With a single, space-saving unit, the Liebert Static Transfer Switch2/Power Distribution Unit combines the switching capabilities of the STS2 with the benefits of a proven power distribution unit.

Liebert designed the STS2/PDU to bring you a distribution system that will close the power delivery loop in your critical facility. It 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, isolation, and power monitoring, as well as dual-source switching, to provide the protection your vital computer or communications equipment demands.

Available in capacities from 250 to 800 amps, the Liebert STS2/PDU offers flexible expansion capabilities to fit growing sites. The packaged system approach of the Liebert STS2/PDU is convenient and space-saving, reducing installation time and cost compared to a conventional approach using multiple interconnected components.

Features of the Liebert STS2/PDU include:

- True dual-bus power distribution switches automatically or manually between two AC power sources.
- Computer-grade grounding automatically establishes a single point ground to meet major manufacturers' recommendations and the requirements of the National Electric Code.
- Fully compatible with the non-linear loads of modern computer systems and other electronic equipment.
- Built-in metering and alarm annunciation with communication to Liebert SiteScan® Web centralized monitoring.
- Compact single cabinet conserves valuable floorspace compared to non-packaged solutions.
- Single cabinet design reduces installation time and cost.
- The unit can be easily relocated to protect your investment.
- UL Listed as a Complete System to meet safety requirements for fast, hassle-free inspection and building code approvals.
- A choice of distribution options to fit site requirements.

Liebert Power Monitoring Capabilities

The operation of the Liebert Static Transfer Switch2 can be monitored using

- Liebert Nform™ Monitoring System
- Liebert SiteScan® Web Comprehensive Facility Monitoring System
- Liebert Universal Monitor and Remote Power Monitor Panels
- Third-Party Monitoring Systems

For more information, see pages 42 and 43.