



PROTECTING THE INDUSTRIAL EVOLUTION

Tailored Solutions For Industrial And Process Reliability

Power Availability

Power Protection

Power Conversion/Distribution

Heat Removal/
Precision Air Conditioning

Monitoring/Service



Process Availability And Productivity Go Hand In Hand

TODAY'S INDUSTRIAL FACILITIES LIVE AND DIE WITH THEIR INTEGRATED INFORMATION SYSTEMS

It used to be that computer systems were relegated to one area of the plant — the data center — and were primarily used for accounting, clerical and other business-only functions. All that is evolving.

Welcome to the new world of e-business and supply chain management.

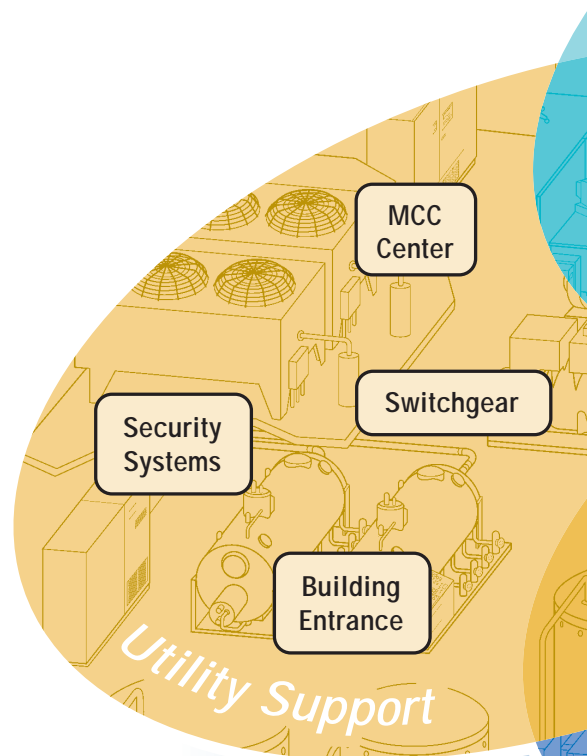
Any components or raw materials that went into the end product — that's what we called "inventory." Now it's the "supply chain" and it can extend all the way back to the supplier's own manufacturing line.

There's a need to provide real-time data to others up and down this chain...much of it transmitted via the Web. To be successful, every business — from a single component manufacturer through assemblers, distribution and right down to the purchaser's front door — must be interconnected real-time into a single, vast, complex demand/supply network.

This new arrangement has resulted in a huge increase in the number of datapoints that must now be tracked and maintained by a manufacturer. That means there will be an even greater need for reliable electrical power to operate these systems, as well as cooling capability to keep these sensitive electronics from overheating — especially those on the plant floor.

Vital Plant Manufacturing And Information Systems

Share A Common
Need For *Reliability*



Industrial Evolution

Old World	New World
Harsh/Heavy Industry	Light Industrial Distribution/Assembly
Stand Alone	Networked
Single Shift	24x7
Centralized Manufacturing	Distributed Manufacturing
Manpower Intensive	Outsourced Personnel
Mainframe	Localized Controls
Proprietary Communication	Open Communication
Proprietary Systems	Web based
Capital Intensive	Application Service Provider
Inventory	Supply Chain Management
Purchase Orders	B2B Sites
Invoices	Electronic Transfers

Liebert: Not Just A Single Solution — A Single Source For *Multiple SOLUTIONS*

These are some of the critical processes — common to almost any industrial operation — that utilize sensitive electronic equipment that must be protected:

The supply chain — requires remote sensing and reading equipment, not only in the warehouse, but back up the supply chain through MRP (material resource planning) and ERP (enterprise resource planning) systems.

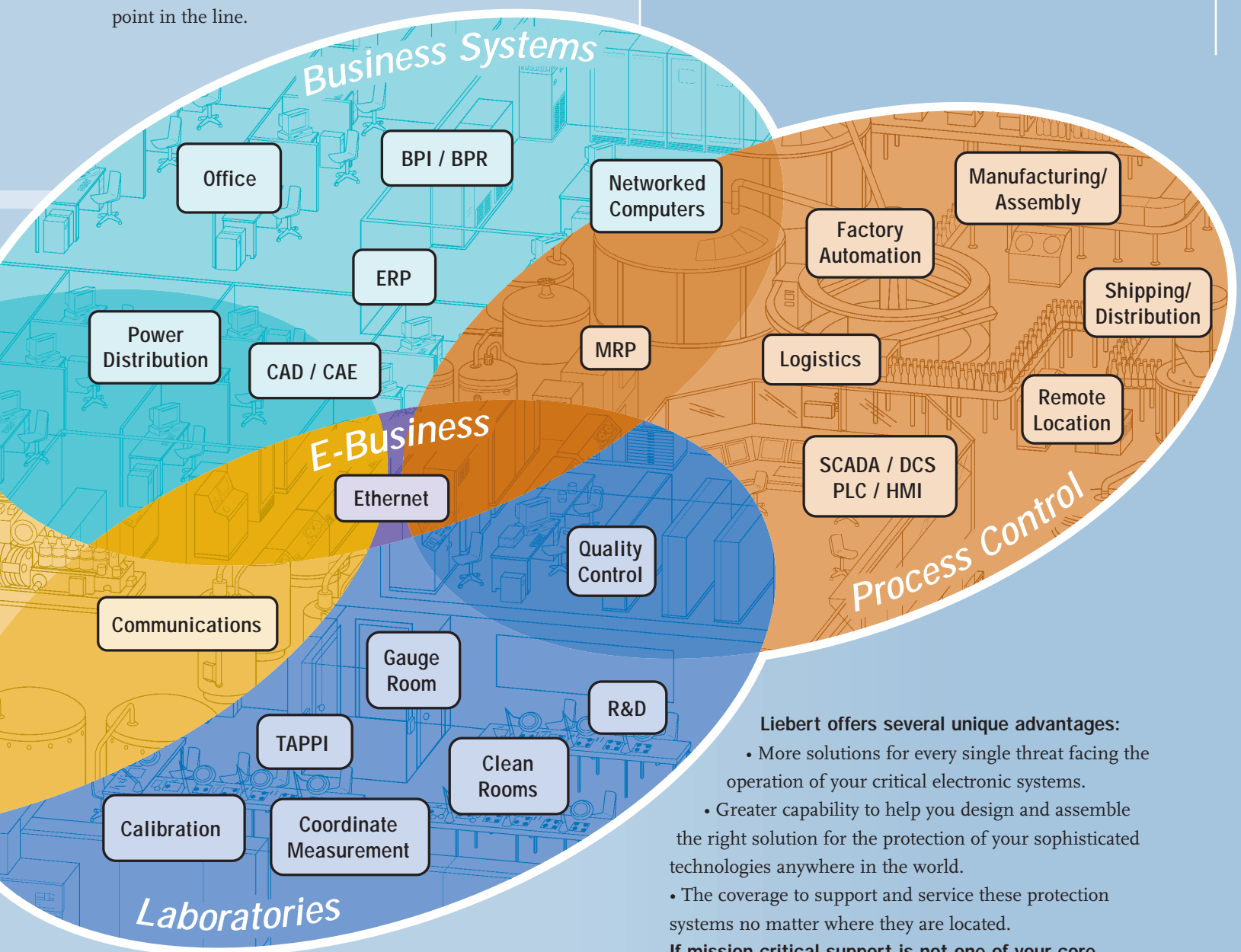
Design and engineering — sophisticated CAD/CAE systems and networks that need to be protected.

Process control — not just mission-critical process controllers and computer-aided manufacturing systems out on a factory floor, but flow measurement capabilities that track components and products at every point in the line.

Quality control — includes QC labs with sensitive measurement systems, as well as multiple test points on the line itself that measure temperature, size, weight, shape, etc. against specification.

Warehousing, distribution and logistics — recording real-time status through e-commerce and e-tracking systems, where a product is in the distribution cycle, from raw materials through to customer delivery.

Business process oversight and management — for a wide variety of purposes, including ERP, financial and BPI/BPR (business process improvement/re-engineering).



Liebert offers several unique advantages:

- More solutions for every single threat facing the operation of your critical electronic systems.
- Greater capability to help you design and assemble the right solution for the protection of your sophisticated technologies anywhere in the world.
- The coverage to support and service these protection systems no matter where they are located.

If mission critical support is not one of your core competencies — or if it's a key success criterion — then Liebert needs to be part of your core team.

THE FIVE KEYS TO “HIGH NINES” RELIABILITY

“High nines” reliability means 99.99999% system availability. In practical terms, that means “zero downtime” for mission-critical applications.

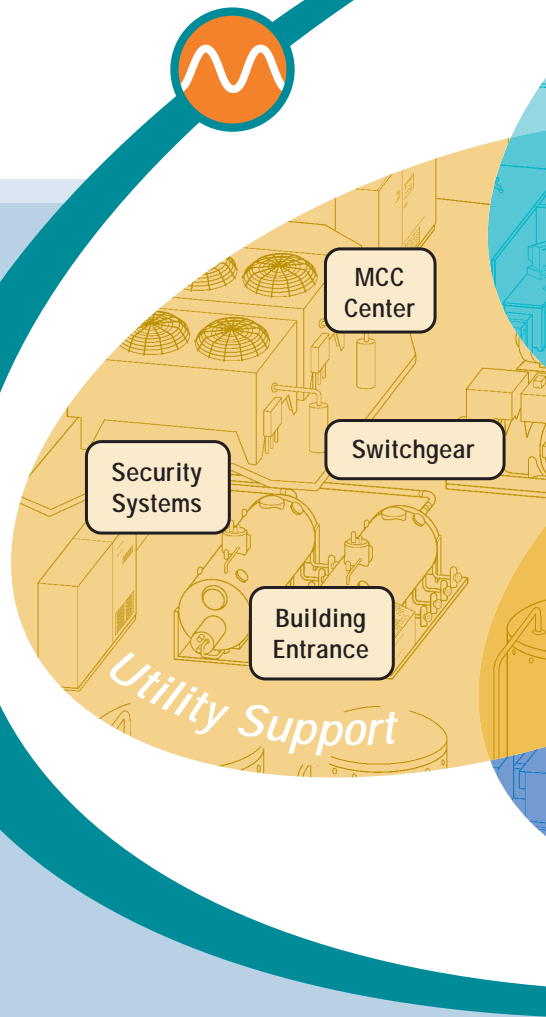
Power Availability

System reliability depends on the continuity of power, and the ability to ride through outages of any duration.

Can that be achieved?

Yes, but it requires a new level of protection planning, and a dedication to seamless execution. Each of these five reliability needs must be met individually, and the entire protection plan must integrate faultlessly.

Only Liebert
can do it all.

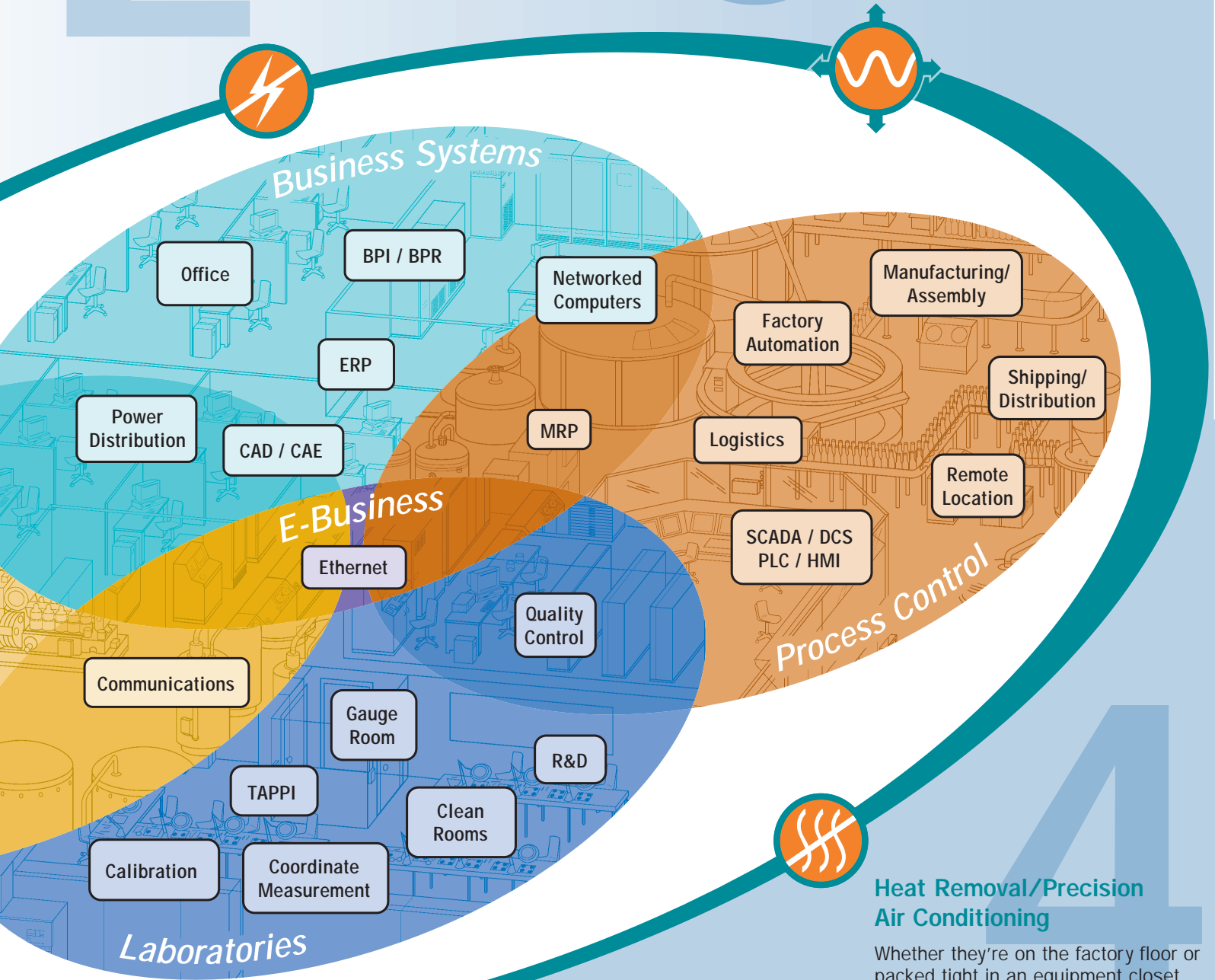


Power Protection

Utility power is often far too “dirty” for sensitive systems, resulting in unexpected software glitches or even hardware damage. In these situations, surge suppression and power conditioning can deliver the power quality you need.

Power Conversion/Distribution

Improper power distribution can actually inject disturbances into your electrical lines. The right power distribution system for a microprocessor-controlled stamping press is far different than what is required for a room of PCs.



Business Systems

Office

BPI / BPR

Networked Computers

Manufacturing/ Assembly

ERP

Factory Automation

Shipping/ Distribution

Power Distribution

CAD / CAE

MRP

Logistics

Remote Location

E-Business

Ethernet

SCADA / DCS
PLC / HMI

Process Control

Quality Control

Communications

Gauge Room

R&D

Calibration

TAPPI

Clean Rooms

Coordinate Measurement

Laboratories

Monitoring/Service

A small problem in a critical facility can quickly escalate into a disaster. The ability to continuously monitor what is happening with your support equipment — and taking preventive actions to keep that protective “envelope” at peak operating efficiency — are vital to system reliability. It’s also important to know that whether it’s scheduled preventive maintenance...or an emergency situation, service support will be quickly and expertly handled.

Heat Removal/Precision Air Conditioning

Whether they’re on the factory floor or packed tight in an equipment closet, sensitive electronics are especially susceptible to overheating conditions that can cause thermal shutdown or total component failure. Testing processes can also be affected by air temperature, humidity and contamination problems. Precision air conditioning, specialized enclosures and rugged remote protection can assure system uptime against these threats.

PROTECTING THE BACKBONE OF THE E-BUSINESS WORLD

Wonderful new electronic systems have revolutionized the way you do business. Unfortunately, potential disaster lurks around every corner. A failure of any of the systems that drive your e-business...can mean no business.

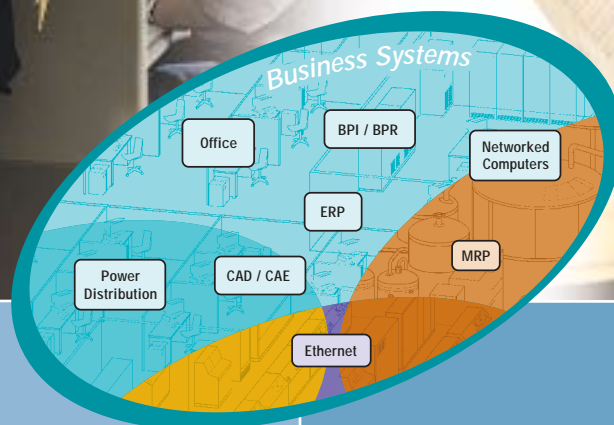
Business Systems — including data centers, in-plant networks and design engineering which provide e-commerce, MRP, ERP, CRM, supply chain management, logistics, warehouse management, CAD/CAM, etc. — are now vital to efficient and profitable operation.

The problem is that every piece of this e-puzzle is susceptible to power problems, as well as environmental conditions such as temperature fluctuation and particulate matter in the air. If one link in this chain goes out, it can seriously affect every other part of the process.

Only Liebert is positioned to supply the necessary support required to keep these systems operating around the clock — precision air conditioning, power protection equipment, specialized enclosures and facility monitoring systems. Only Liebert has the expertise that it takes to bring it all together for your unique application.

Keeping our customers happy is the key to keeping them coming back. If they're not happy with purchasing from our web site — they will definitely go somewhere else. We depend on our CRM system to help us do this, but if it goes out because of a power outage or other problem...who knows what will happen to a potential sale.

I don't need to tell you how competitive the automotive business is these days. We need every edge we can get to be successful. That's why our MRP, ERP, and CRM systems tie all our production, sales and distribution together. If any of these go down — so does our ability to deliver, which affects our profits.



Tailored SOLUTIONS

Liebert has been protecting critical electronic business systems better and longer than anyone. It's this experience and our breadth of product solutions that enable us to give you the right answer every time.



Power Availability

Reliable, high-quality power is of the utmost importance to business computing systems. Liebert makes the industry's widest range of uninterruptible power supply (UPS) systems, including the proven double-conversion topology with more than 1,000,000 hours MTBF — all of which can be used in a variety of configurations to match your needs for redundancy and maintainability.



Power Protection

Liebert helps safeguard your vital electronic systems from power glitches by protecting critical incoming distribution systems at every building entrance — electric utility, telephone lines, antenna lines and cable — as well as guarding against locally generated power surges. These products can also protect the power and communications lines between pieces of equipment — data lines, telephone, Ethernet, twisted pair, coax, signal/control wires — all the way down to a single I/O.



Power Conversion/Distribution

Business systems are made up of hundreds of sensitive electronic components. The delivery of secure power to both single and three-phase AC equipment is handled efficiently and reliably with Liebert power distribution systems.



Heat Removal/Precision Air Conditioning

Because of the high heat output associated with computer systems, around-the-clock cooling is vital to the uptime of these operations. Liebert precision air conditioning systems offer the highest levels of reliability with such options as dual cooling sources and systems with internal redundancy.



Monitoring/Service

Maintaining your critical business systems 24 x 7 requires real-time knowledge of what's going on inside — plus the ability to speed help to the site in the event there are problems. Liebert can provide full-scale monitoring and control of critical support systems, as well as the largest service organization in the industry.

CREATING THE PERFECT ENVIRONMENT FOR PRODUCTIVITY

The power quality and cooling requirements for process control and other manufacturing systems have drastically increased due to the use of microprocessor and computer control of this equipment.

Silicon Valley has come to the factory floor. Not only are individual pieces of equipment becoming “smart,” they are being connected together into a plant floor backbone of increasing sophistication. Information flow in the production process has become the critical competitive edge in discrete manufacturing and continuous process industries today.

In addition to providing adequate back-up power for these processes, it is also necessary to have a higher level of power and air quality to assure optimum performance.

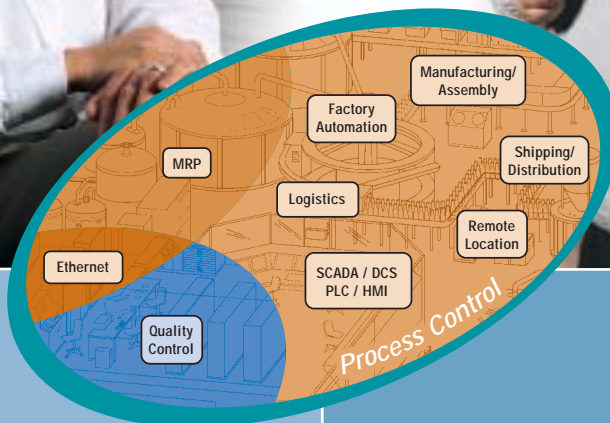
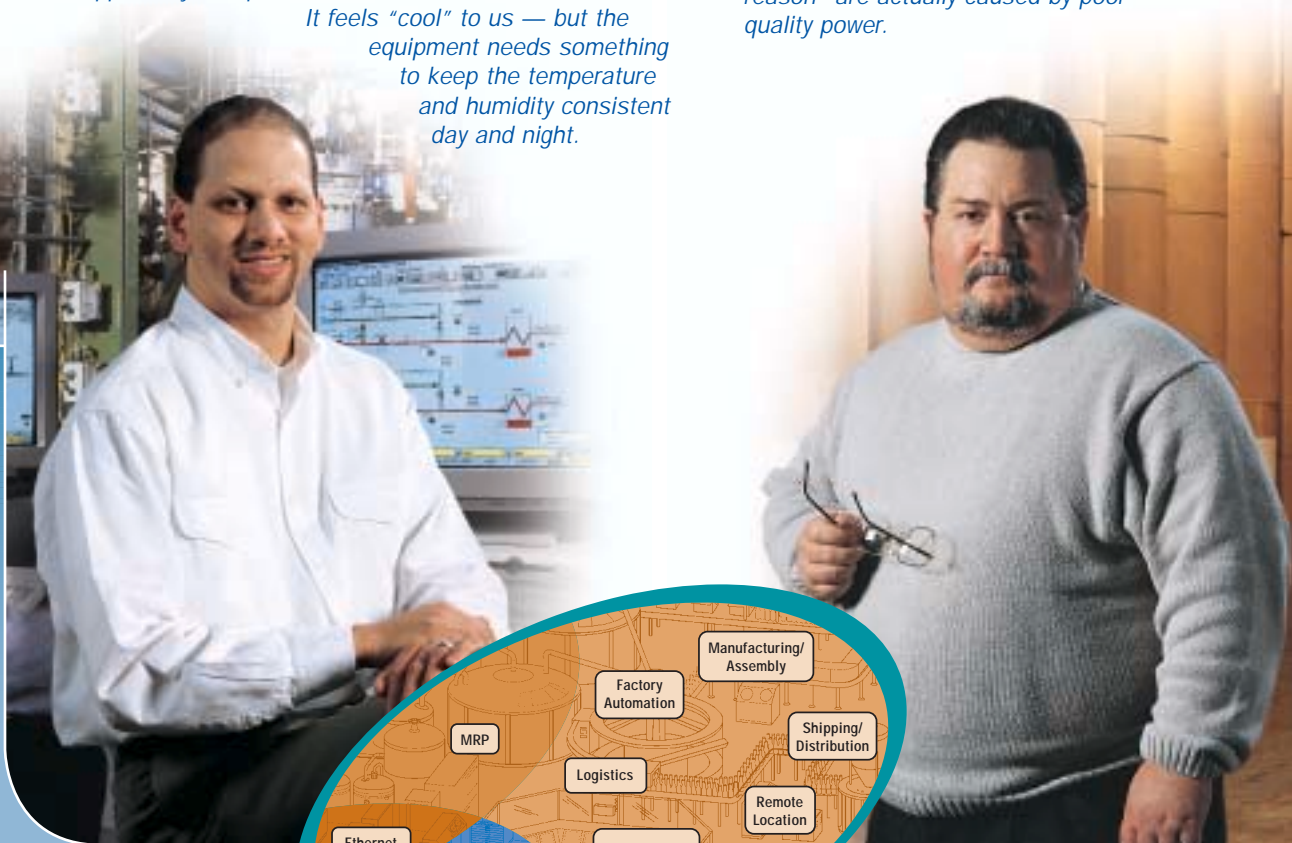
Liebert is the only source with the capability to supply precision air conditioning, AC power distribution and protection equipment, specialized enclosures and facility monitoring systems to meet any and all of your process availability needs. Plus, it's all backed by the industry's most extensive factory-trained service organization, enabling us to respond quickly to customer needs.

Because of the heat generated in a large oil refinery, we've always had to air condition our central control room. But in the last few years, we've had problems keeping the new digital equipment operating properly. Apparently, the problem is the environment in here.

It feels “cool” to us — but the equipment needs something to keep the temperature and humidity consistent day and night.

Operating an Ethernet-based distributed system in the harsh surroundings of a pulp and paper plant is tough enough. Now I find out the problems we've had with some of our process control systems shutting down for “no apparent reason” are actually caused by poor quality power.

Call 1 800 877 9222 For Your Local VAR or Representative or www.liebert.com



Tailored SOLUTIONS

Liebert is the one source that can meet your requirements for critical protection systems able to handle the toughest requirements of manufacturing and process control applications. These systems must be able to tolerate heat, dust and potentially corrosive conditions in order to protect sensitive electronic equipment within this environment.



Power Availability

Today's industrial facilities require a variety of systems to power the many different types of loads found in process control and manufacturing applications. Liebert offers a full range of these systems, capable of providing a secure supply of power to your critical process equipment.



Power Protection

Substandard power can threaten industrial facilities in ways you may never have even considered. That's why Liebert offers surge suppression systems that can protect anything from an entire building, down to a single piece of equipment...and all the way to each I/O.



Power Conversion/Distribution

Delivering converted, conditioned power throughout a large industrial complex is an important step in protecting availability. Liebert power distribution systems offer an economical way to supply power throughout your facility. These self-contained, factory-tested systems save time and money, as well as provide a clean, uncluttered looking installation. They also include advanced features such as remote monitoring capability.



Heat Removal/Precision Air Conditioning

It's no secret that the electronic equipment in control rooms and plant floor locations is capable of putting out a substantial amount of heat. Certain processes must also be continually cooled to assure proper results. Liebert has the answer with the industry's widest range of precision cooling equipment — from stand-alone precision air systems...to applications integrated with your central chiller or scrubbers...to dedicated industrial process fluid chillers for heat removal.



Monitoring/Service

You have enough to worry about operating an industrial facility, so why not get some help. Liebert can provide full-scale monitoring and control of critical support systems – plus global service capability, including preventive maintenance and emergency situation support 24 x 7 for your entire facility infrastructure.

PRECISE MEASUREMENT AND EVALUATION REQUIRE EQUALLY PRECISE POWER AND COOLING

Many businesses depend on laboratories for both development of new products, as well as the ongoing analysis of work in progress. Any deviation from established procedures due to power, temperature, humidity or dust problems can ruin valuable work — especially if these disturbances are not detected.

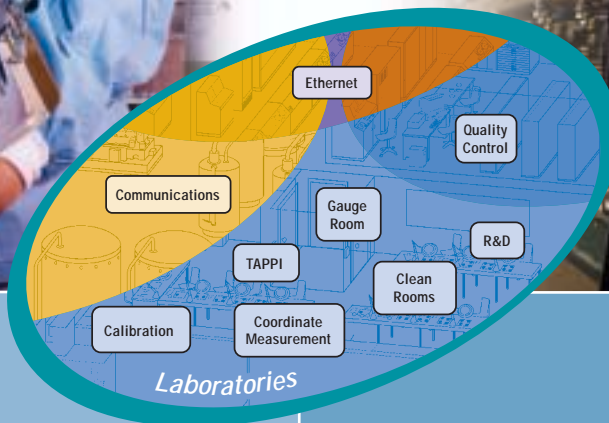
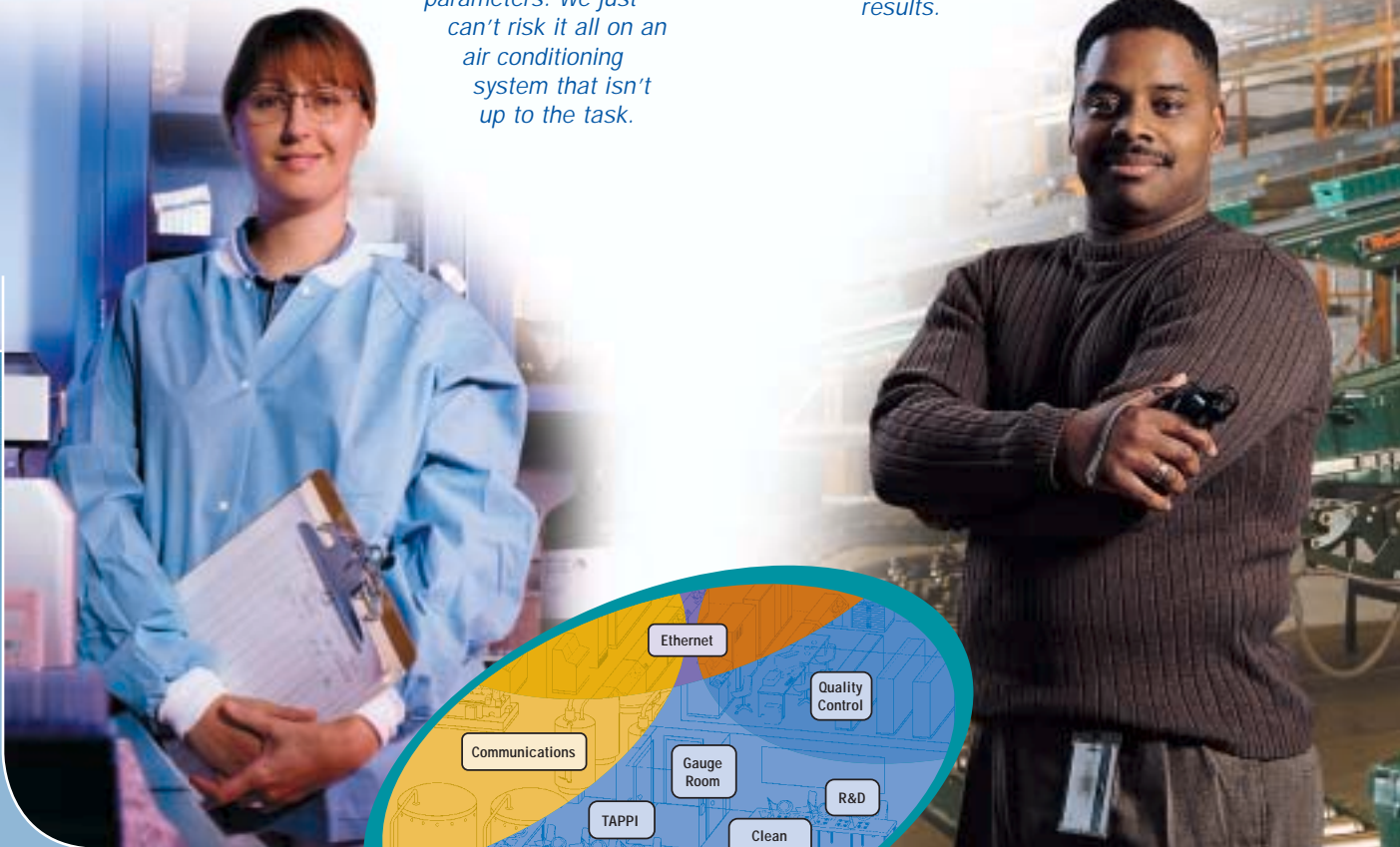
Laboratories — including quality control, R&D, clean rooms, calibration and measurement rooms — depend on a controlled environment to assure accurate readings.

Liebert is the one company that manufactures a full range of precision air conditioning, power protection equipment, specialized enclosures and facility monitoring systems for these vital facilities. We also offer you the industry's most extensive service capabilities with factory-trained technicians, enabling us to respond quickly to customer needs wherever the equipment is located.

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There are literally millions of dollars riding on the pharmaceutical work performed in this laboratory. The environmental conditions inside must be constantly maintained within prescribed parameters. We just can't risk it all on an air conditioning system that isn't up to the task.

The process variables we want to test within our lab can be instantly undermined by poor quality power or temperature and humidity problems. Even a small glitch can create inaccurate or misleading results.



Tailored SOLUTIONS

The critical nature of the work performed in laboratory facilities requires environmental and power support systems that eliminate power, temperature and humidity as process variables. Liebert is the one source you can trust for real solutions that truly meet your unique needs.



Power Availability

Many laboratory processes require a continuous flow of power to achieve success. Liebert has the breadth of UPS products to assure the integrity of your data by allowing you to ride through sags and outages or permit an orderly shutdown of the system.



Power Protection

Laboratories are often islands in a sea of large, power-hungry pieces of industrial equipment such as large motors and compressors. These installations often require power protection that regulates voltage. Liebert's power conditioning systems and transient voltage surge suppression solutions are designed to shield critical lab instrumentation from the full range of power anomalies.



Power Conversion/Distribution

As laboratories grow with more and more critical equipment, the need to get proper power to each of these components becomes even more important. Liebert's power distribution products will ensure the delivery of clean power to these vital systems.



Heat Removal/Precision Air Conditioning

Temperature, humidity and airborne particulate can have a detrimental effect on laboratory processes and analysis. Liebert has the answer with the industry's widest range of precision cooling equipment in a size to fit your space and application requirements.



Monitoring/Service

No matter how simple or complex, Liebert monitoring systems can chart, trend and record temperature, humidity and power parameters for your lab environment. Liebert service can be there wherever and whenever maintenance is required.

MAINTAINING POWER AND COMMUNICATIONS FOR AN ENTIRE FACILITY REQUIRES THE PROPER SUPPORT

The ability to keep major facility power sources and distribution up and running at all times is critical to plant operations.

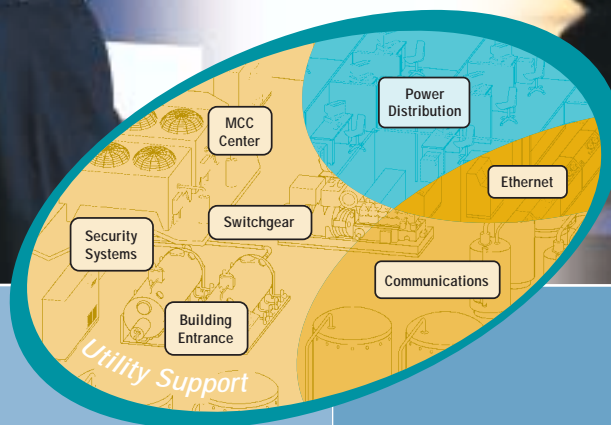
Industrial plants use many pieces of large electrical equipment to distribute and control power throughout the facility. These include electrical switchgear and motor control centers vital to numerous plant functions, as well as various communications systems throughout the facility.

This equipment is capable of generating very high levels of heat within the room where it is located. Motor controls are also at additional risk due to poor quality input power often found in industrial environments. Communications links must be protected from power surges and other related problems

Only Liebert can offer you a full range of precision air conditioning, as well as power protection equipment, including transient voltage surge suppression protection, power conditioning and UPS to protect these vital systems. And we back it all with the industry's most extensive factory-trained service organization.

Just about any power disturbance can ruin a batch of semiconductors during the fabrication process. We need to be sure that electrical power is constant and reliable throughout the entire plant

If this wastewater lift station stops operating — it can mean big problems for the people in this neighborhood. It must stay cool inside and have a clean, steady source of power to keep it going 24 hours-a-day. I also need to know if there are any problems before a catastrophic failure occurs.



You depend on the large amounts of power fed throughout your plant.
No one knows more about supporting the operation of these
distribution and control systems than Liebert.



Power Availability

Motor control and other power systems that are critical to operations may require reliable, uninterrupted flow of power for maximum productivity. Liebert manufactures a full line of UPS equipment designed to meet the continuous duty needs of these vital systems.



Power Protection

Any piece of equipment that uses electricity can be adversely affected by poor quality power. Liebert power conditioning and surge suppression systems prevent both externally and internally generated power spikes and aberrations from shutting down your critical systems.



Power Conversion/Distribution

Delivering converted, conditioned power throughout a large industrial complex is an important step in protecting equipment availability. Liebert power distribution systems offer an economical way to monitor and supply power throughout your facility.



Heat Removal/Precision Air Conditioning

Electrical switchgear and motor control equipment are capable of putting out a substantial amount of heat. Liebert has the answer with the industry's widest range of precision cooling equipment — from stand-alone DX Systems to applications involving your central chiller.



Monitoring/Service

You have enough to worry about operating a large industrial facility, so why not get some help. Liebert can provide full-scale monitoring and control of critical support systems, plus global service capability including preventative maintenance and emergency response for your entire facility support infrastructure.

EXTENDING THE ENVELOPE OF SECURITY WITH FULL-SCALE FACILITY PROTECTION

So much of the financial success of your business depends on the proper operation of sensitive electronic equipment.

Industrial environments are at additional risk due to the many sources inside the facility that can create excessive heat, as well as electrical surges, sags and noise. Many ongoing problems with pieces of equipment may well be due to cooling and power problems.

With today's emphasis on e-business and the digital linking of so many processes within a company, you simply cannot afford to ignore these risks any longer.

Only Liebert can offer you a full range of precision air conditioning, power protection equipment, specialized enclosures and facility monitoring for these vital systems. Plus we back it all with the industry's most extensive factory-trained service organization.

Being VP of operations means just that — it's my job to make sure things around here operate properly. But with so much computer-controlled machinery and other new electronic sensors and reporting systems — we're facing new challenges every day. Power quality and indoor environment issues affect our productivity. To be competitive, we need to track every aspect of our business from suppliers to our plant floor to our customers. If something goes down, not only does it cost us time and money — it costs us customer satisfaction.



Liebert: *Your Partner In
Facility Protection*

Liebert is the only organization that can take all the protection you need for electronic business systems, process control, laboratories and plant utility systems — and integrate it all into the most effective and efficient configuration possible.



Pick One:

Someone who bends your needs to fit their solutions



Someone who configures a solution for your unique needs

If you checked the second box, talk to us. Only Liebert has the breadth of products and services needed by today's industrial operations:

- Precision environmental control systems
- Versatile UPS and power conditioning
- Monitoring and communications systems that integrate protection with network management
- Comprehensive service to keep it all working at the highest level of reliability

Simply put...

no other source has the products, application knowledge and service resources to meet your total need for *"high nines"*

industrial and process reliability.



For complete information,
visit us at www.liebert.com

WE HELP YOU GET IT RIGHT — RIGHT FROM THE START.

Tailored Solutions For Industrial And Process Reliability

For over 35 years, Liebert has been providing tailored solutions for protecting the operation of critical electronic systems in a variety of industries. From laboratories to industrial business networks, we've used our expertise to tailor the right products, site monitoring and global service capabilities into a variety of specific solutions.

Liebert's years of experience and knowledge of leading edge technologies enables us to truly understand your needs — both in terms of overall reliability and specific areas of equipment protection. Whether it's a new or existing facility, we listen to you and your preferences to help us develop solutions that are right for your application.

We recognize that each situation has its own unique requirements and are better prepared than any other manufacturer to deliver the right level of reliability at the right price. We do this through a combination of knowledge, experience, product selection and service capability.

Someone Nearby To Help Before And After The Sale

Specifying a high-availability facility support system requires someone who is knowledgeable in all phases of environmental and power protection. Knowing where to turn for ongoing maintenance or service is just as important.

One of the many things that differentiates Liebert from others in our business is local presence. We have the most extensive sales and service network in the world. Liebert's extensive network of technical sales associates, backed by the industry's largest service organization, enables us to respond quickly to customer needs.

No matter where your needs for protecting the infrastructure of your industrial facility are heading — Liebert is the one source that can deliver the right solution to support your industrial evolution.



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