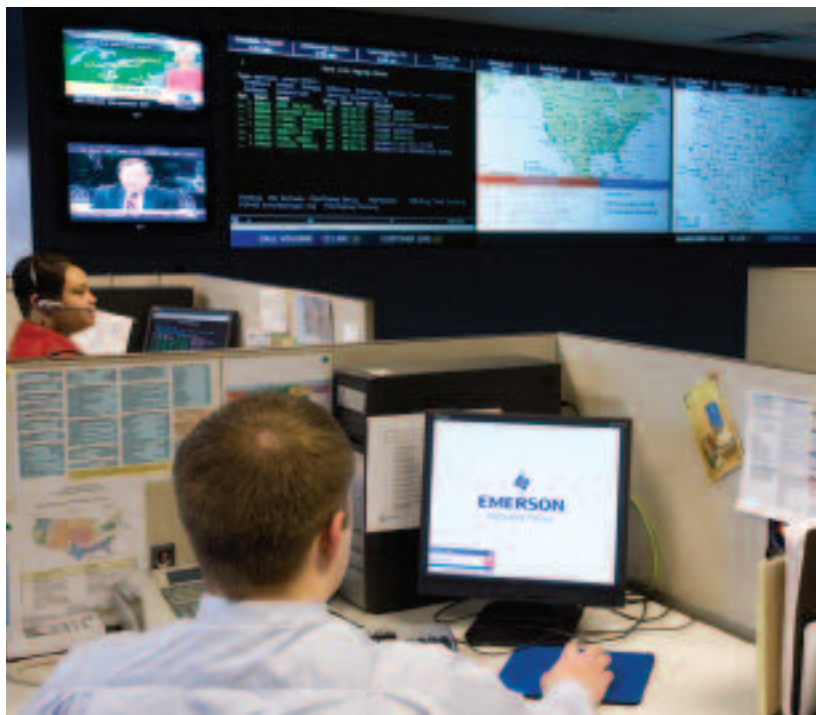


Monitoring
For *Business-Critical Continuity™*

Liebert SiteScan® Web System

Adaptable, Proactive Monitoring Hardware And Software



When Systems Are Critical... Monitoring Is Not An Option

You have invested thousands of dollars in precision equipment and controls to protect your critical facility from the threats of heat, humidity and power problems. But stopping there can leave you vulnerable to the biggest threat of all...not knowing when an event that can detrimentally affect the performance of your site is taking place.

All systems are operating in a normal fashion.



12:00 AM
Saturday

Utility power fails. The UPS system switches the load to battery back-up.



1:00 AM
Saturday

The diesel generator starts as a power source for the load, but then fails on overload.



1:01 AM
Saturday

The facility is unmanned over the weekend and no one is aware of the problem. The data center completely shuts down when the UPS battery is depleted after about 30 minutes.



1:02 AM
Saturday

WITHOUT LIEBERT SITESCAN WEB MONITORING SITE MONITORING WITH LIEBERT SITESCAN WEB

12:00 AM
Saturday



All systems are operating in a normal fashion.

1:00 AM
Saturday



Utility power fails. The UPS system switches the load to battery back-up.

1:01 AM
Saturday



The diesel generator starts as a power source for the load, but then fails on overload.

1:02 AM
Saturday



Liebert SiteScan Web system immediately notifies key facility personnel of the problem.

Data Center
Personal

Facility
Personal

Enterprise
Personal

Having received the "Generator failed on overload" alarm, the operator can shed non-critical loads from the generator and is then able to start the generator. Emergency power is available to the operation before the batteries are depleted. Utility power is restored after several hours and the data center has never gone off-line.

MONITORING

Lets you see what's
happening in real-time

ALARM MANAGEMENT

Alerts you to a situation before
it becomes a major problem.

Site monitoring is a critical element of maintaining maximum availability for your critical operations. Hundreds of facilities around the country count on the peace-of-mind they receive knowing that a Liebert SiteScan™ system is constantly on the job watching over the operation of these critical sites. Simply put...Liebert SiteScan delivers the information you need to protect and manage your facilities more efficiently and effectively.

With Liebert SiteScan Web you can utilize today's Web technology to oversee and control critical support systems from just about anywhere.

Now the actual problem lurks to cause another disaster. They have no way of going back to review the sequence of events. If this facility had been using the Liebert SiteScan Web site monitoring system, they would have known that the battery was not the real problem.

No one knows the system is completely down until they arrive Monday morning for work. Hundreds of employees are idle until the data center can be brought back on line.



8:00 AM
Monday

Data center personnel think they've solved the problem by replacing a dead battery on the generator, but the real problem — an overload condition on the generator — is still undetected.



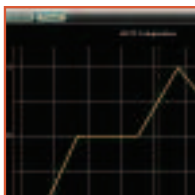
9:00 AM
Monday



10:00 AM
Monday

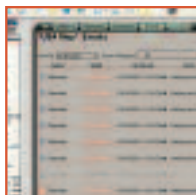
DOLLARS AT RISK

8:00 AM
Monday



All systems are up and running for the start of the workweek. Data center personnel can determine why the generator failed to start using Liebert SiteScan Web's historical trending and analysis. (The maintenance staff had already replaced a dead battery detected by Liebert SiteScan Web earlier, so they knew the battery was not the problem.)

9:00 AM
Monday



As a result of Liebert SiteScan Web's trending and analysis capabilities, the operator discovers that the kilowatt reading of the system control cabinet exceeded the generator by 20%, causing the overload condition.

10:00 AM
Monday



The operator implements load shedding procedures to prevent the problem with the generator from happening again.

TRENDING & ANALYSIS/HISTORY

Provides you with the information to keep a problem from happening again.

What You Don't Know Can Hurt You

The reliability of your computing and communications systems is a direct result of the reliability of the power and environmental systems that help maintain their proper operation. Monitoring and control must be an integral part of your air and power infrastructure. This is the key to assuring high availability and maximizing your investment in these critical facilities.

You Have To Know There Is A Problem Before You Can Correct The Problem

There are any number of points within a critical facility where an unseen small problem can develop—and lead to much larger and costlier disasters. These examples show the types of occurrences that can develop—and what can happen if they are not responded to in a timely manner.

What Exactly Do You Need To Know?

You need enough information to guard against anything that can keep your critical support systems from being able to protect the operation of your computing and communications systems. Knowing where and what the problem is—that's the first step to keeping it from becoming a disaster. No matter what you need to know about the operation of your facility and the essential systems inside, Liebert has a product that will enable you to do it.

Enclosure Systems

Racks and cabinets are a great way to consolidate and protect equipment. But by nature of a cabinet, problems developed inside can be concealed.

Critical Mechanical Systems

The good news is that you had a redundant pump so that when your primary pump failed your cooling system stayed on-line. The bad news is that you are down to one pump and you never know it.

Automatic Transfer Switches

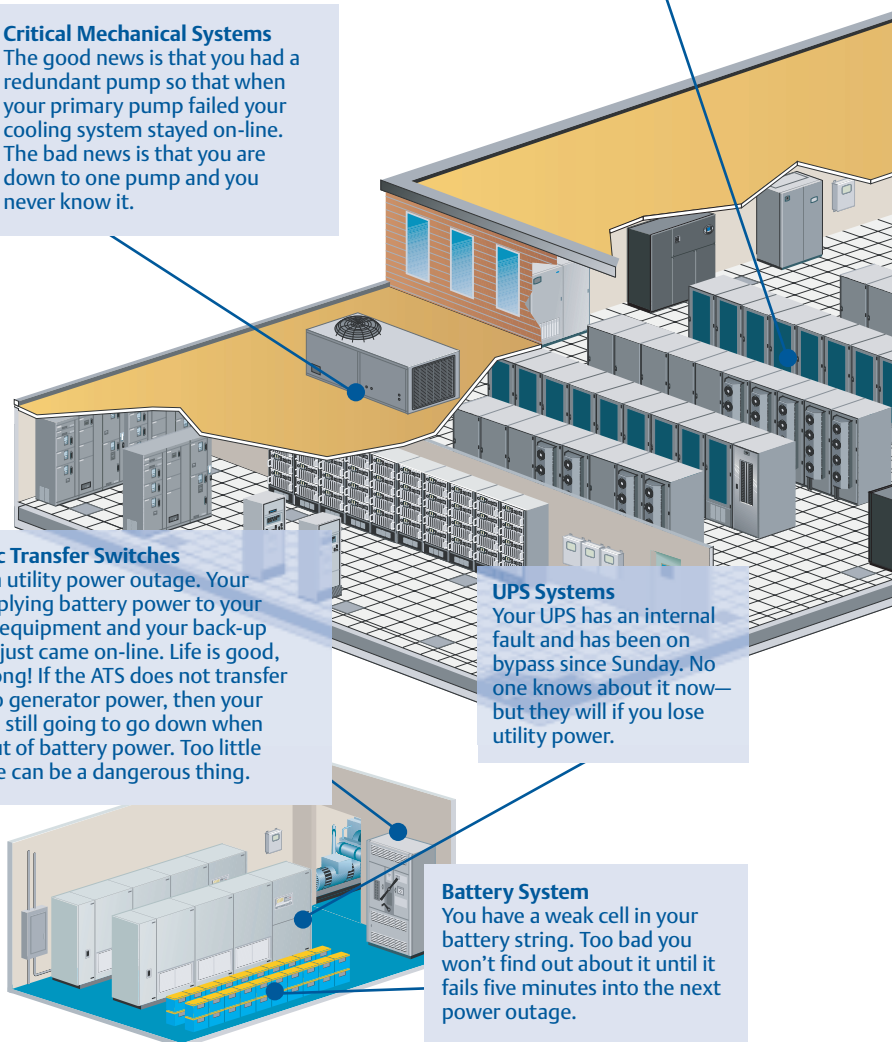
You have a utility power outage. Your UPS is supplying battery power to your computer equipment and your back-up generator just came on-line. Life is good, right? Wrong! If the ATS does not transfer the load to generator power, then your network is still going to go down when you run out of battery power. Too little knowledge can be a dangerous thing.

UPS Systems

Your UPS has an internal fault and has been on bypass since Sunday. No one knows about it now—but they will if you lose utility power.

Battery System

You have a weak cell in your battery string. Too bad you won't find out about it until it fails five minutes into the next power outage.



Power Conditioning Units

A grounding problem in your power conditioning system causes small voltage disturbances. You may not even realize there is corrupt data or damage to other systems until bigger problems occur months later.

UPS Systems

Yesterday the UPS failed its automatic battery self test. Today the UPS failed to carry the load during a momentary power interruption, halting a critical process. The problem isn't the UPS or the weak battery. The real problem is that you didn't know that the UPS failed a self-diagnostic test.

Environmental HVAC Systems

High head pressure, compressor short cycling, dirty filters, pump or fan failure—these are just a few of the problems that can cause mission-critical air conditioning systems and other HVAC equipment to go down and temperatures to go up. One more problem? Not knowing that these troubles are developing in the first place.

Breaker and Power Distribution

Several circuits are on the verge of overload. If one of these breakers trips, servers will crash. Too bad you are not aware of the situation.

Static Transfer Switches

A transfer switch fails to transfer when your primary power feed goes down in the middle of the night. You won't know about it, though, until tomorrow morning when there are no sales reports, no e-mails and certainly no one conducting normal business.

DC Power Systems

An overvoltage condition in an essential DC power system causes an alarm to sound. Problem is, no one is there to hear it.

Surge Protection

Thank goodness you installed that surge protector. It has protected your site through many thunderstorms. Too bad it self-destructed protecting you from that last surge and you don't know that it needs to be replaced.

Water Leaks

Your data cabling is lying in a growing puddle of water under the raised floor because of a plumbing leak. It is just a matter of time before that affects your operation. Who knows how long it will take to track down the cause of the problem.

Generator Operation

The good news is your emergency generator came on-line during a power failure last night and kept things running for several hours. The bad news is that the fuel tank is now almost empty—and no one realizes it, leaving you unprotected for the next outage.

Intrusion Alarm

The entrance of unauthorized personnel into a remote shelter is a big problem. The real problem is that the person who needs to know this is happening is unaware and possibly isn't in the same building—or even the same state.

Liebert Monitoring Solutions Provide The Right Information To The Right People.

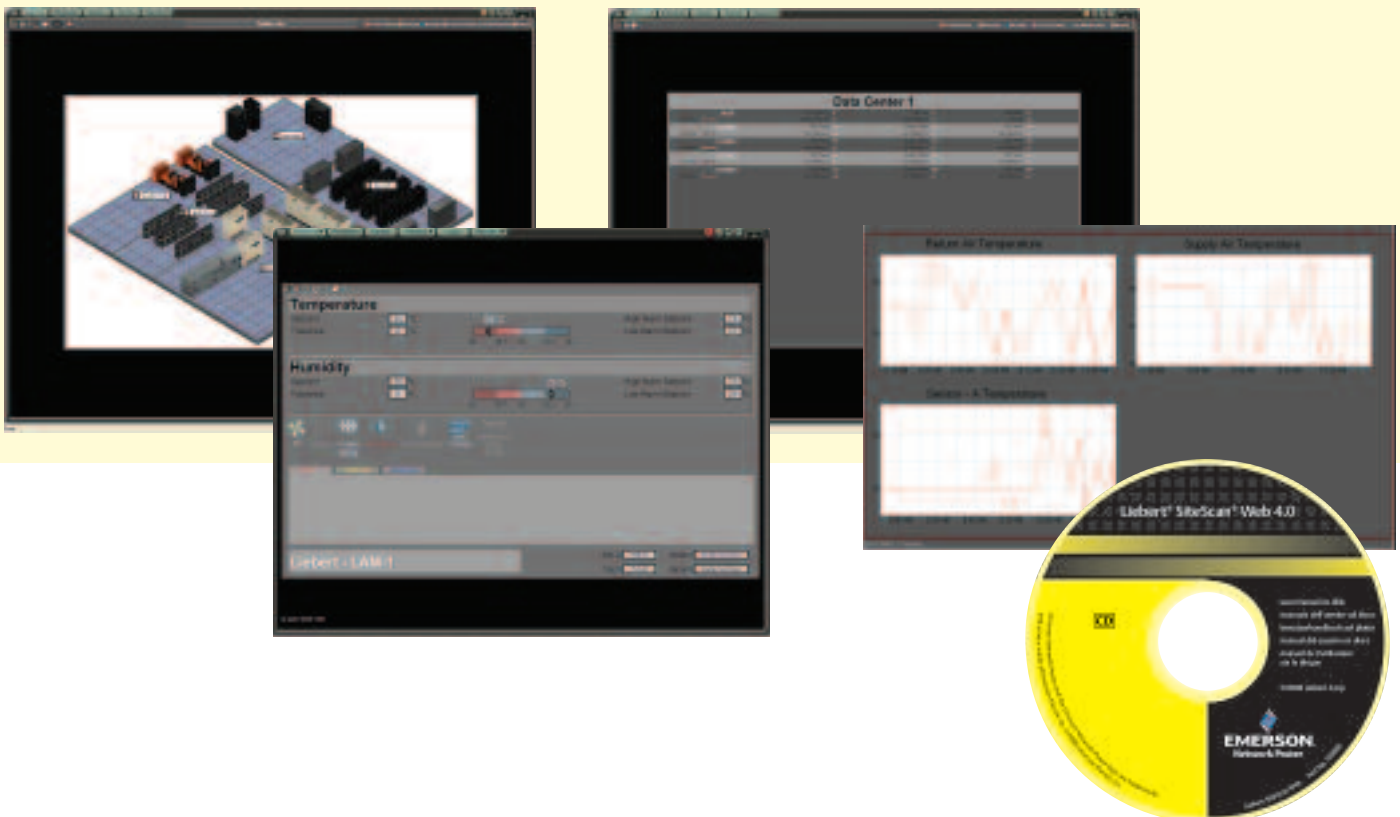
Liebert SiteScan® Web

Everyone, Everywhere, Every Time

Important information can be right in front of you... but it's probably buried in a mountain of data. Liebert SiteScan Web can provide trend and historical analysis in a graphic format: easy-to-read charts and comparative analysis of multiple parameters at one time. It's easier to compare and differences can be spotted more quickly. Problems can be solved in many ways, but the best solutions usually start with good information delivered quickly. Liebert SiteScan Web gives you both.

Design The System Around Your Facility—And Your Needs

Liebert SiteScan Web's operation can be tailored to the specific requirements of your critical support infrastructure and the needs of different people in your organization, giving you a powerful tool to manage your enterprise.



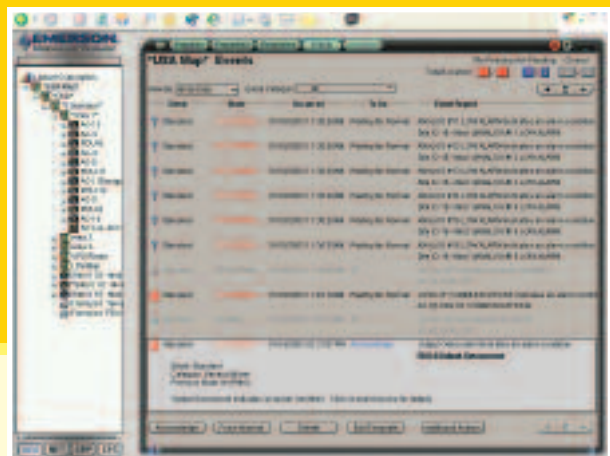
Liebert SiteScan Web Does It All

Liebert SiteScan Web provides comprehensive monitoring and control of your critical facility support systems—and lets you do it from virtually anywhere in the world.

Real-Time Monitoring And Control

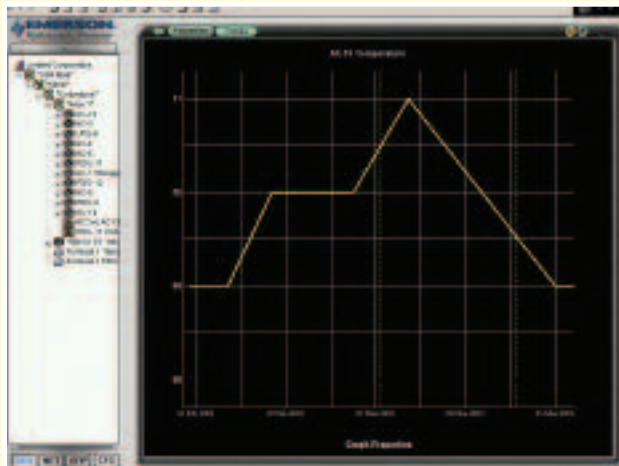
With Liebert SiteScan Web you can get a real-time status “snapshot.” It allows the operator not only to access current data—but to interact with graphic programming logic in real-time for full control functionality. During an alarm, the system can provide instant information—a view of actual performance. This allows for quick equipment assessment and the ability to take corrective action based on current, factual information.

Web Appliance (WAP) And PDA Support



Event Management And Reporting

Liebert SiteScan Web will show you exactly where the problem is—not some cryptic message that will leave you guessing. Events and alarms associated with a specific system, area or equipment selected in the navigation tree are displayed. This view allows you to monitor alarm or event information geographically, as well as to acknowledge events, sort events by category, actions and verify reporting actions.



Data Analysis And Trend Reporting

With Liebert SiteScan Web you get powerful tools to analyze data and use it to prevent specific problems from occurring again. The operator can view trends by using the navigation tree and selecting the "trends" button in the graphic window. Users can create custom trend data that consist of one or more multiple data points.

Enhanced Trend Reporting

With Liebert SiteScan Web you get a comprehensive report writing tool to create customized reports.

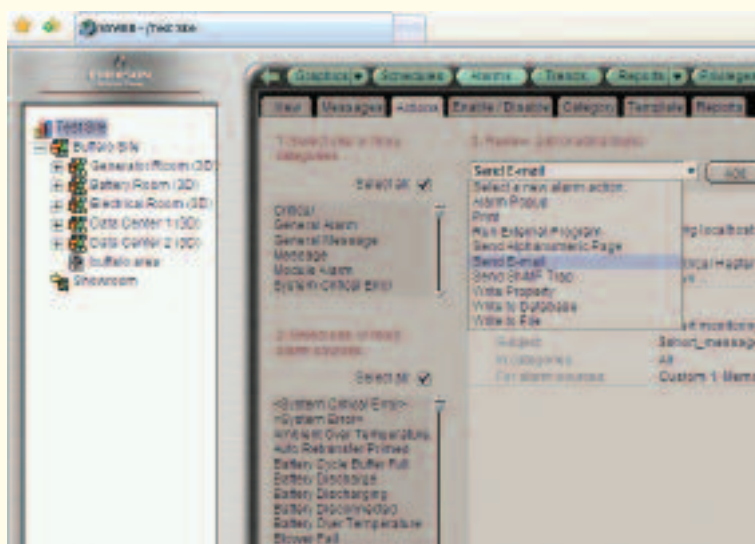
System Features And Functions Make The Difference

Liebert SiteScan Web offers a number of unique operational features that make it comprehensive yet easy-to use. These involve the areas of security, accessibility, internationalization, operating features, subsystems, open standards, ease-of-learning, system configuration and reliability.

Event Management And Reporting

The Information You Need—Every Time You Need It

Comprehensive alarm management includes notification plus the ability to see the information necessary to making the right decisions.



Getting The Right Information To The Right People

Liebert SiteScan Web's alarm management features give you automatic notification of alarms including graphical display and audible alarm annunciation, pager and fax interfaces and can even notify Liebert's Remote Monitoring Service. Alarm management and event notification insures that alarms are detected and acted upon, which allows problems to be quickly resolved.

During an alarm, Liebert SiteScan can provide instant status information. This allows for quick equipment assessment and the ability to take corrective action based on current, factual information.

Available Reporting Actions

Event Notification:

Getting the right information to the right people.

Data Delivery:

Proactive management through: Trends, Graphs, Report Generation and Dashboards.

BMS Integration:

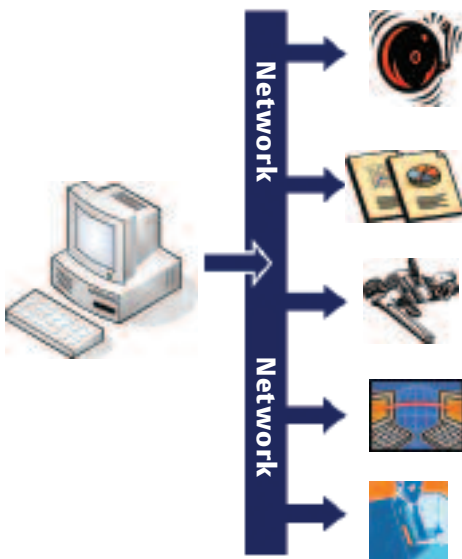
Making the most of your investments and infrastructure; build redundancy through dual monitoring.

NMS Notification:

Provide notification to your already installed network monitoring systems; again, building reliability and redundancy.

24 x 7 Remote Management Services:

For lights out, event escalation or vendor management solutions.



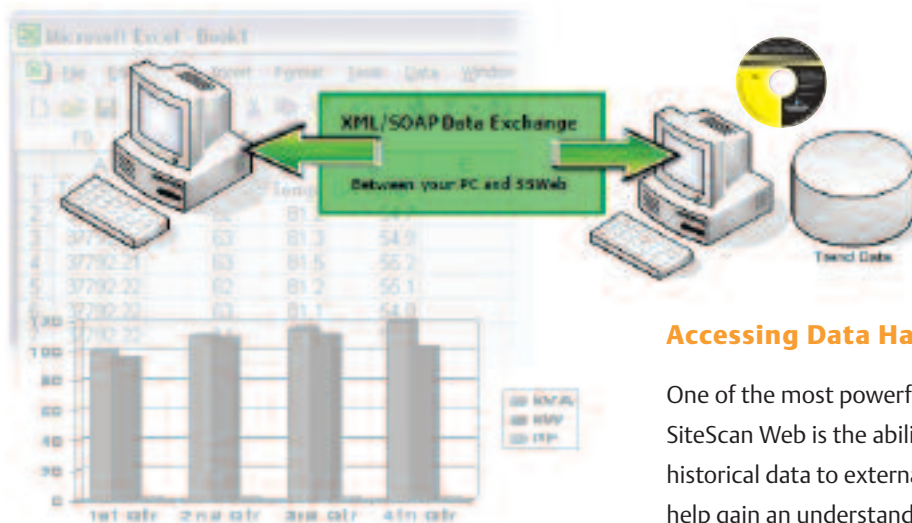
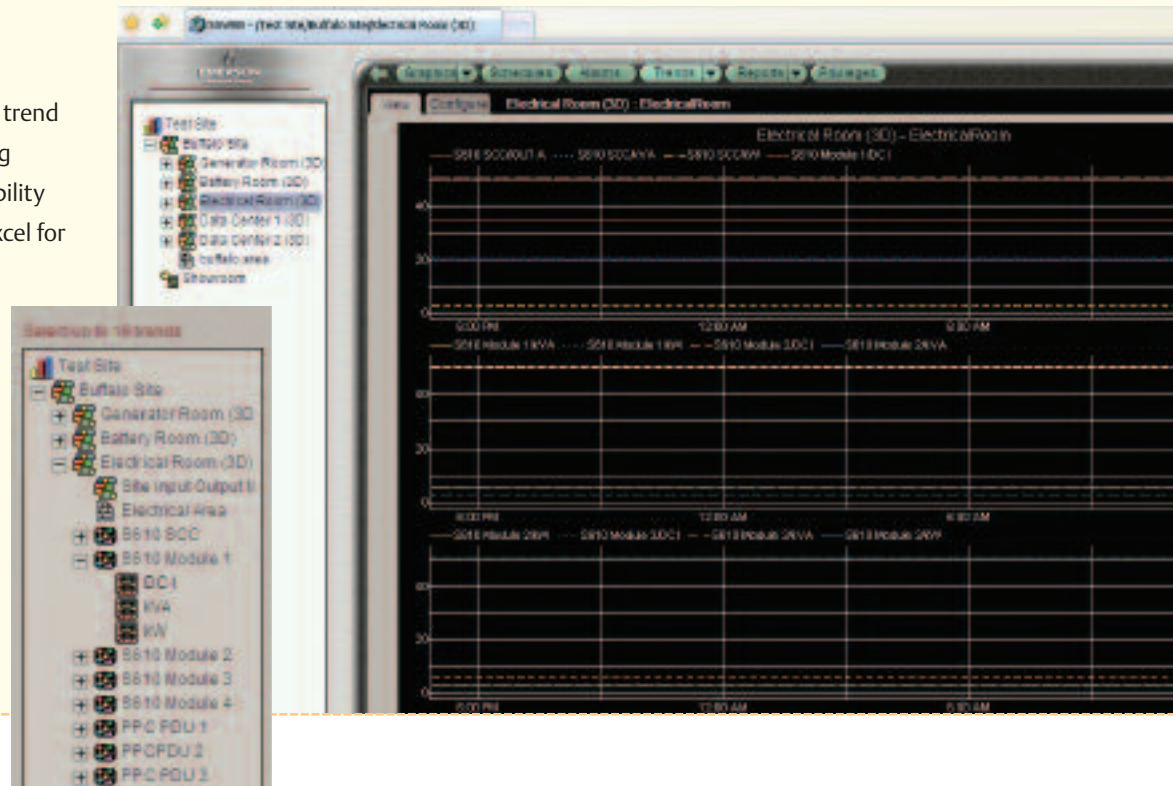
Data Analysis And Trend Reporting

Trending And Analysis Help Prevent Problems In The First Place

Track Changes To Plan The Future

Liebert SiteScan Web provides trend and historical analysis including easy-to-read graphs and the ability to export data to Microsoft™ Excel for in-depth analysis of data.

With Liebert SiteScan Web you get powerful tools to prevent specific problems from occurring again.



Accessing Data Has Never Been This Easy

One of the most powerful features within Liebert SiteScan Web is the ability to easily export current and historical data to external sources that create reports to help gain an understanding of the Data Center's efficiency, redundancy and overall capacity.

Liebert SiteScan® Web

The Step-By-Step Method To Configuring Your Liebert SiteScan® Web System

Selecting the appropriate hardware to use with your Liebert SiteScan Web software is key to creating the optimum monitoring and control system for your critical facility.

Step One 1

Server Software And Client License

Choose the software and software components that complement your vision of the system.

SSWEB — the base software package that includes 2 concurrent user.



Step Two 2

IGM Interface Control Modules

Choose the type and number of SiteLink modules that will communicate to Liebert units, otherwise known as IGMs. Models are available to allow communication to 2, 4 or 12 Liebert units.

SiteLink-2E — connects up to 2 Liebert units.

SiteLink-4E — connects up to 4 Liebert units.

SiteLink-12E — connects up to 12 Liebert units.



SiteLink-12e

Step Three 3

Input/Output Control Modules

Choose the number of I/O modules necessary to monitor your digital and analog points. Next, choose your sensors if necessary.

***Site I/O 10/0** The model number follows the number of inputs and outputs of a module. For example, Site I/O 10/0 equals 10 inputs, 0 outputs.

***Site I/O 32/0**

***Site I/O 16/16** Digital = Dry contact

***Site I/O x/8** Analog = 0-5 VDC, 4-20mA and thermistor sensors

Sensors 10 input module, dry contacts and thermistor compatible. For distributed applications.

* SiteGate required



Site I/O 10/0
Site I/O 32/0
Site I/O 16/16
Site I/O x/8

Step Four 4

Third-Party Interfaces

Decide whether or not it will be necessary to intelligently communicate to third-party equipment such as fire alarm panels, chiller plants, generators and non-Liebert equipment.

Site TPI-E — will integrate to third-party equipment. Contact Liebert's AE Group for a quotation on interfacing to third-party equipment.



Site TPI-E

Step Five 5

Contact Us

Contact your local representative to assist with your site-specific applications.

Online Demo

<http://sitescandemo.liebert.com>

Logon: **LiebertRep**

No Password Required

Third Party Integration

The Liebert Monitoring Group can provide multiple paths for integrating Liebert equipment into your existing Building or Network Management system. Through strict conformance to Open Protocols like Modbus, BACnet, SNMP, Liebert can provide robust and effective integrated solutions.

Building Management System Interfaces

Building Management Systems maintain a vital role on overall operations of facilities and buildings. Simply stated, Building Management Systems (BMS) create and maintain controlled, energy-efficient environments for all types of premises. This includes the management and monitoring of core aspects of each facility, from power supply, temperature, and humidity, to fire, access and security.

Generally speaking, most BMS systems contain the ability to communicate to Modbus and or BACnet devices. These languages or protocols are considered “Open” from the standpoint that they do not require special tools in order to integrate these devices into a BMS system.

The Liebert Monitoring Group supports Modicon's Modbus and ASHRAE's BACnet definitions.



SiteLink modules integrate 2, 4 or 12 Liebert units into a single device. The SiteLink has the ability to stand alone and act as a Modbus or BACnet slave through either a EIA-232 or EIA-485 (2-wire or 4-wire) configurable port. In addition, the module supports BACnet over IP.

Output to Building Management Systems using Modbus and BACnet MSTP.



The Site TPI-E product can be used to intelligently communicate to non-Liebert units within your infrastructure. This allows you to effectively monitor critical equipment with Liebert SiteScan Web.

Input from non-Liebert units that use Modbus, BACnet, LonTalk and other non-standard protocols.



Unique Features And Functions That Make Liebert SiteScan Web Different

Liebert SiteScan Web combines open standards technology with the limitless potential of the Internet. The result is the best of both—a system that provides utility, connectivity and speed. But Liebert SiteScan Web is more than just technology...it's our most intuitive, feature-rich and easy-to-use product to date.

Some of the important areas that distinguish Liebert SiteScan Web from other monitoring systems include:



The Use Of Open Technologies

Proprietary systems are history. Today's open standards have introduced new levels of operational efficiency, flexibility and cost-effectiveness for critical monitoring. With open architecture, users can install integrated, easily-modified systems utilizing innovative combinations of familiar components such as Java, Microsoft FrontPage, Internet Explorer and interoperable databases.

Liebert SiteScan Web was built from the ground up around open web technology. It is not a browser enabled "bolt on" to an existing proprietary software package where functionality through the browser is limited. Any device with the appropriate web standards support becomes a full-featured operator interface with the system. This is an important distinction because "full-featured" includes navigation, viewing, event management, data analysis in real time—in other words, all the capabilities you would want in a high-quality front-end monitoring package.

Powerful And Intuitive Operation

Since 1990, Liebert SiteScan critical monitoring systems have led the way with dynamic, custom color graphics that set the industry standard in quality, convenience and ease of use. The system's graphical user interface provided status and control at a glance, while alarm management and comprehensive trend history functions captured critical data and aided in diagnostics. Now, all of this functionality is available through a standard web browser with Liebert SiteScan Web. With it, users can access their system from any type of web-enabled device, such as a standard PC, cell phone or personal digital assistant (PDA)—and maintain the same functionality without any special software or additional plug-ins.

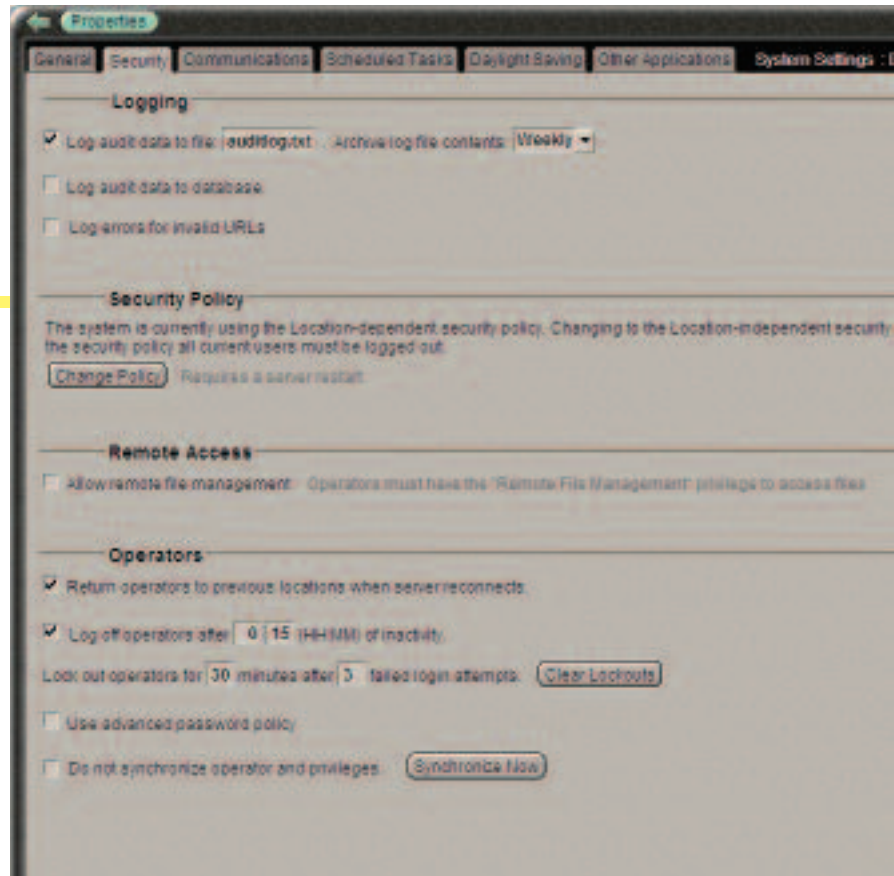
Overall Reliability

The distributed hardware architecture of Liebert SiteScan Web allows you to achieve the "high nines" reliability you require. Each component of the system includes high performance microprocessor and memory to ensure that data integrity is established at the hardware level, unlike systems that require extensive polling to achieve data transfer. Liebert SiteScan Web hardware provides delivery of data, even when communications is lost and then restored. The system does this by accumulating data at the module level so that loss of system communications does not mean lost data.

Advanced Operating Features

System Security

Web-based systems have an advantage over their conventional counterparts because they can take advantage of security features that have been developed to protect bank transactions, personal information and other sensitive data routinely transmitted over the Internet. Liebert SiteScan Web can utilize secure sockets layer (SSL) and secure HTTP (https:) as well as most other administrative policies that are established for your environment such as Virtual Private Networks (VPN). For added security, operators are assigned specific roles and privileges in addition to initial log-on and password protection.

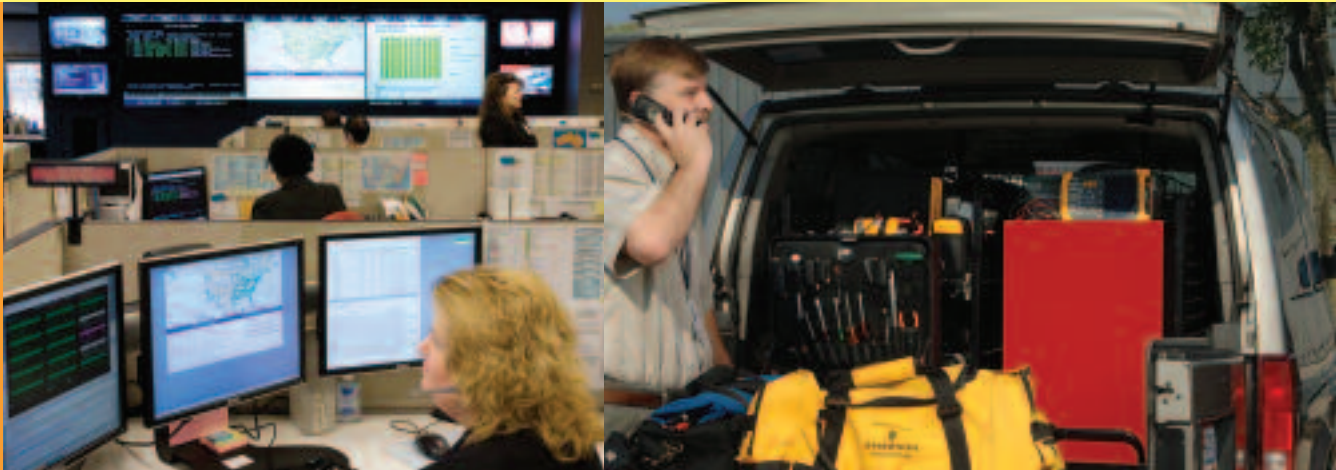


Internationalization

In addition to English, Liebert SiteScan Web is designed to simultaneously support Italian, Korean, Chinese, Spanish, French, German and Dutch, allowing multiple operators to access the same information at the same time in their respective languages.



A Comprehensive Package Of Mission-Critical Services



Remote Monitoring:

Remote Monitoring from Liebert Services alerts you to problems that otherwise go unnoticed. It reduces the time it takes to identify the alarm source, trends and alarm types. Having the right information together with a defined escalation procedure, helps diagnose the true source of a problem.

Ntegrated Monitoring:

With advanced monitoring and network security capabilities, integrating remote monitoring with field service for your UPS, Cooling and Battery systems, provide the ultimate peace-of-mind. Liebert Services Ntegrated Monitoring service provides remote monitoring, diagnostics, trending, and service dispatch with remote and on-site preventive maintenance.

Remote Monitoring With Service Dispatch:

Combining remote monitoring and Ntegrated monitoring at the site level for all critical power equipment with service dispatch provides the ultimate protection. Whether you are a Liebert SiteScan user, lights-out facility or simply require the expertise from Liebert Services, we can provide assurance that you will be notified when a technician is required on-site.

With Liebert Services as your availability partner, you can rest easy. We take care of the technology, so you can take care of your business.

Liebert: The World Leader In Mission-Critical Power And Cooling Technologies



Power Availability And Protection

High Heat Density And Precision Cooling



Power Conversion And Distribution

Integrated Racks And Cabinets

Monitoring Solutions From Liebert — The Smart Decision To Make

Liebert is the only source that supplies the protection infrastructure and all the tools you need to know how it is operating every minute of every day.

From one-on-one supervision of a single piece of equipment to full-scale monitoring and control of several far-flung facilities, no one knows more about what it takes to keep you in the know about your critical systems than Liebert.

A Complete Line Of Environmental Control Systems

From high-capacity mission-critical cooling systems — to compact and above-ceiling units — to our targeted cooling products designed for the demanding requirements of high density electronic installations... there is a Liebert solution designed to cool and protect your critical computing and communications equipment. We make the industry's widest range of mission-critical environmental control, including air conditioners, fluid chillers and heat rejection systems from 1.0 to more than 60 tons, in a variety of configurations and cooling technologies.

Liebert Offers A Full Range Of Power Protection Solutions

A steady flow of power, and the means to get it to each piece of equipment in a critical facility, is a key to systems reliability. The proper functioning of these systems depends on the quality of power and the ability to ride through outages of any duration. Only Liebert offers the breadth of power supply products to meet any of these needs.

- **Power availability** solutions include uninterruptible power supply (UPS) systems from 300 VA to over 1000 kVA.
- **Power protection** products include surge protection and power conditioning systems up to 300 kVA.
- **Power conversion and distribution** systems for both AC and DC power applications range from 15 kVA to 225 kVA.

Liebert Integrated Racks And Cabinets — Protection Wherever It's Needed

Rack-based equipment has formed the foundation of today's IT network. To house and protect these systems, Liebert offers a complete line of rack, cabinets and integrated protection enclosures for rack-mounted components. From open racks employed in large data centers to self-contained, integrated enclosures with cooling and power protection used in remote locations, there is a Liebert rack solution for every application.

Ensuring The High Availability Of Mission-Critical Data And Applications.

Emerson Network Power, the global leader in enabling business-critical continuity, ensures network resiliency and adaptability through a family of technologies – including Liebert power and cooling technologies – that protect and support business-critical systems. Liebert solutions employ an adaptive architecture that responds to changes in criticality, density and capacity. Enterprises benefit from greater IT system availability, operational flexibility, and reduced capital equipment and operating costs.

While every precaution has been taken to ensure accuracy and completeness in this literature, Liebert Corporation assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

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Emerson Network Power.

The global leader in enabling *Business-Critical Continuity™*.

- | | | | |
|----------------|----------------------|------------------------------|-------------------------------|
| ■ AC Power | ■ Embedded Computing | ■ Outside Plant | ■ Racks & Integrated Cabinets |
| ■ Connectivity | ■ Embedded Power | ■ Power Switching & Controls | ■ Services |
| ■ DC Power | ■ Monitoring | ■ Precision Cooling | ■ Surge Protection |

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