

Product catalog

Product and service solutions catalog

For network closets,
server rooms
and data center
applications
November 2016



Eaton's PredictPulse™ provides remote monitoring and management of your IT environment so you have eyes on your power infrastructure 24/7.

(see page 38)

EATON

Powering Business Worldwide

Switch  N to Eaton.

Eaton overview



Eaton is a power management company and provides energy-efficient solutions that help customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. We are energized by the challenge of powering a world that demands more.

Electrical power is more than just a convenience; it's an essential element of doing business today. To deliver the competitive advantage our customers demand, Eaton helps enterprises proactively measure and manage the power system as a strategic integrated asset through its lifecycle. Eaton's electrical business is a global leader with expertise in many areas:

- power distribution and circuit protection
- backup power protection
- control and automation
- lighting and security
- structural solutions and wiring devices
- solutions for harsh and hazardous environments
- engineering services

With more than 100 years of experience in electrical power management, Eaton is positioned through its global solutions to answer today's most critical electrical power management challenges. From groundbreaking products to turnkey design and engineering services, critical industries around the globe count on Eaton. And, combined with our personal service, support and bold thinking, we are answering tomorrow's needs today.

Our story

Over the years, our innovative portfolio has grown, including solutions from Best Power, B-Line, MGE Office Protection Systems, Phoenixtec, Powerware, Santak and Wright Line. Our products and solutions serve the needs of institutional, government, utility, commercial, residential, IT and data center markets worldwide.

Our portfolio

Eaton's power quality portfolio of products for network closet, server room, data center and multi-tenant data center applications is comprehensive and offers power management solutions from a single-source provider. This includes UPSs, surge protective devices, power distribution units (PDUs), remote monitoring, meters, software, connectivity, enclosures, airflow and cable management, lighting and professional services. Our portfolio is designed to fulfill specific customer requirements, complement new or pre-existing environments and deliver comprehensive solutions.

Eaton.com/powerquality

Eaton.com/datacenters

Our customers

Eaton has been safeguarding the critical systems of businesses across the globe from desktop and small network closets to the largest data centers. Eaton solutions provide clean, continuous power to keep business operations flowing. We work with IT and facilities managers to effectively manage power in virtually every business segment, including data centers, retail outlets, healthcare organizations, governmental agencies, manufacturing firms, financial institutions and a wide variety of other applications.

Eaton.com/pqsuccess

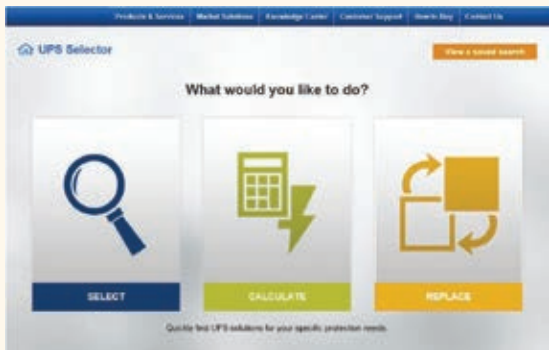
Eaton overview



The Eaton Blackout Tracker

Every day in the US and Canada thousands of people experience an interruption to their electrical service in homes, businesses and public sector organizations. Eaton's interactive Blackout Tracker provides a snapshot of the causes and impact of these outages.

Eaton.com/blackouttracker



UPS Selector

Selecting the correct power protection solution is critical to ensuring the flexibility and scalability needed for data center growth. That's why Eaton is focused on providing the most reliable power quality solutions for enterprise and business IT systems, from network closets to large data centers.

Use our UPS selector tool by visiting Eaton.com/UPSselector to choose the correct UPS for your application.



Eaton's rack PDU selector tool

Choosing the correct rack power distribution unit (PDU) is easier than ever with Eaton's rack PDU selector tool. With the tool, a user can compare features between selected models, view technical drawings, search by part number or save a previous search.

Use our rack PDU selector tool by visiting RackPDUSelector.Eaton.com



TAA-compliant UPSs

Eaton is proud to offer TAA-compliant products to our customers. These *Assembled in the U.S.A.* UPSs are designed to be used in a wide range of public sector applications, allowing us to better serve the government's needs.

Please visit Eaton.com/taups to learn more about these products.



Strengthen your connections with resources

Be on top of the latest IT industry issues and technologies with Eaton's library of thought leadership articles and white papers.

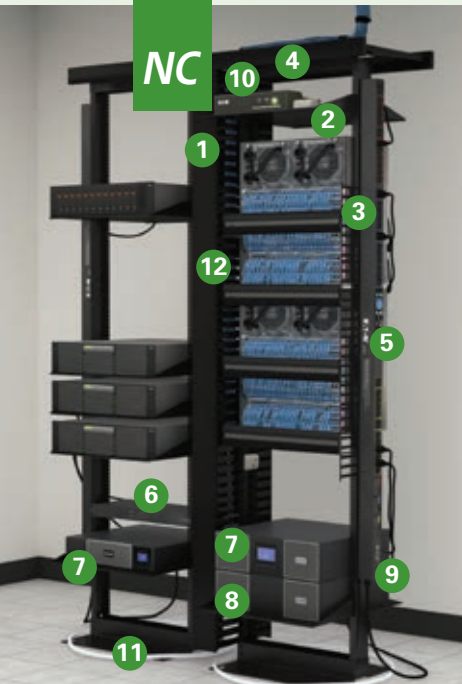
Eaton.com/pq/whitepapers

Eaton is proud to be an ENERGY STAR® partner. A joint program established by the U.S. Environmental Protection Agency and the U.S. Department of Energy, ENERGY STAR is intended to help consumers save money and protect the environment through energy efficient products and practices.



Eaton power management solutions

Network closet



Network closets are a critical link for IT networks and infrastructure. Whether a single network closet is your entire IT setup or you have thousands of them scattered across the globe, Eaton has a variety of products and services to help keep your IT systems running efficiently.

Eaton products to support your network closet

Organization

- 1 Two-post rack
- 2 Rack shelf
- 3 Cable managers (vertical and horizontal)
- 4 Overhead cable tray
- 5 Basic rackmount PDU
- 6 Automatic transfer switch

Protection

- 7 Rackmount UPS
- 8 Extended battery module
- 9 Maintenance bypass module

Management

- 10 Environmental rack monitor and probe
- 11 Water sensor
- 12 Power management software

Server room



Server rooms continually change to serve shifting business priorities, applications and advancing computing technologies. When space is a premium, Eaton's compact UPS solutions minimize footprint—whether they're installed in the rack, at the end of a row or against the wall. Our rackmount solutions also provide more power per rack unit.

Eaton products to support your server room

Organization

- 1 Enclosure
- 2 Open frame rack
- 3 Cable managers (vertical and horizontal)
- 4 Overhead cable tray

Protection

- 5 Rack power module
- 6 Maintenance bypass module
- 7 Rackmount UPS

Management

- 8 Intelligent rackmount PDU
- 9 Environmental rack monitor and probe
- 10 Power management software
- 11 Water sensor

Eaton power management solutions

Your data center is the backbone of your business, and Eaton has efficient, innovative, scalable, mission-critical solutions to meet your specific needs. We provide reliable distribution equipment, network power systems and UPSs to ensure a steady flow of high-quality power—because an outage of just a few seconds can mean catastrophe in a data center.

Data center



Eaton products to support your data center

Organization

- 1 Enclosure
- 2 Cable managers (vertical and horizontal)
- 3 Overhead cable tray

Protection

- 4 End-of-row/in-row UPS
- 5 Battery cabinet
- 6 Distribution cabinet
- 7 Busway
- 8 Airflow chimney
- 9 Automatic transfer switch

Management

- 10 Intelligent Rackmount PDU
- 11 Enterprise management software
- 12 Environmental rack monitor and probe
- 13 Water sensor
- 14 Smoke detector
- 15 UPS and power distribution services and support

Look for these symbols at the top, right corner of each page to help determine which products will provide the best solution for your needs. Note: PoS stands for point of sale.



Eaton's RackPack IT solutions

Simplified power management

Selecting the right power management solution can be challenging. Eaton's answer to the many questions that come along with choosing the correct power management solution is simple: RackPack IT™. Eaton has bundled key elements into a single part

number, delivering the right solution for any IT deployment to help users effectively organize, protect and manage the environments of their choosing. With onsite installation and assembly, RackPack IT is a smart choice for users looking to simplify their power management experience.

Eaton's Intelligent Power Manager (IPM) software provides all the tools required for monitoring and managing power within your virtual environment.

The environmental monitoring probe provides temperature and humidity readings to reduce the chance of overheating within your environment.

Cable management enables effective organization within the rack, improving airflow and rack access.

Eaton's ePDU G3 Metered Input rack PDU features best-in-class technologies, including $\pm 1\%$ billing grade accuracy, an advanced LCD pixel display, a hot-swap meter and the ability to operate at high 140°F (60°C) temperatures.

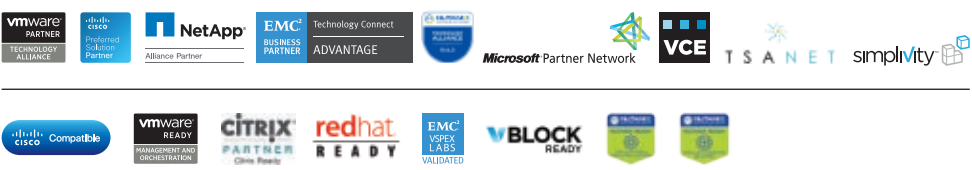
The industry leading 9PX UPS and extended battery module provide reliable, versatile and efficient backup power.

The enclosure balances the requirements of airflow management, greater power demands and cable management.

Additional integration within the stack

Eaton's RackPack IT solutions have been validated by leading IT vendors, meaning that the user can be confident that their solution is maximizing the power infrastructure capacity within their IT environment—regardless of which RackPack IT option they deploy.

Reasons to RackPack IT	
Save time Reduce the need for advanced configuration with one part number	Save money Ordering a bundled solution saves money
Peace of mind Avoid after the fact configuration mistakes	Flexibility Multiple options covering various applications



For more information, visit Eaton.com/RackPack.

Powerware series

Eaton 3S

350–750 VA

Delivers high efficiency and energy-saving battery backup and surge protection for your premium home and office equipment—ready to go right out of the box

Typical applications:

- Premium small office/home office computers and accessories
- VoIP equipment
- Home entertainment devices



Eaton 5S

550–1500 VA

Energy-efficient UPS with user friendly LCD screen and convenient form factor delivering surge protection and battery backup

Typical applications:

- Premium small office/home office computers and accessories
- Home entertainment devices
- VoIP equipment



Eaton 5SC

500–1500 VA

Energy-efficient UPS with user friendly LCD screen, USB port for automatic HID identification on Windows®, Mac® and Linux®, best price to performance ratio in its class and a small footprint for easy integration within small spaces

Typical applications:

- Small business servers
- Network-attached storage (NAS)
- Network equipment
- ATMs
- Ticket machines and kiosks



CUSTOMER TESTIMONIAL

“I’m really glad to have found Eaton, and to have found a company that’s willing to give me a warranty like that.”

- Arland Head, director of information technology, LeBlanc’s Food Stores, referring to the Eaton 3S UPS

Product details: PC, workstation and home A/V UPS

Features	3S 350–750 VA	5S 550–1500 VA	5SC 500–1500 VA
Form factor	Standalone or wall-mount	Tower	Tower
Start-on-battery	•	•	
Audible alarms	•	•	•
Serial or USB port	USB	USB	USB
Eaton UPS Companion software	•	•	•
Data line surge protection	•	•	•
Three-year warranty (with registration)	•	•	•
Extended warranty (optional)	•	•	•
Plug and play feature	•	•	
EcoControl for energy efficiency (750 VA only)	•	•	
Sinewave output on battery			•
Icon-based LCD		•	•
ABM technology (50% longer battery service life)			•

Eaton 5P

1500–3000VA

Delivers reliable enterprise class backup power with an efficiency rating of up to 99 percent

Typical applications:

- Servers
- Voice/data networks
- Storage systems
- Cisco switches and servers



Eaton 5PX

1000–3000 VA

Provides an integrated power management solution for any IT environment with extended runtime capabilities, 99 percent efficiency and two managed outlet segments

Typical applications:

- IT network wiring closets
- Medical systems
- Communications/VoIP network systems

This product is **TAA-compliant**.



CUSTOMER TESTIMONIAL

"The 5PX was exactly the solution we needed for our current location and size. It was affordable, easy to self-install and it can grow and move with us."

- Marty Sellers, director of IT & facilities, Synapse Wireless

Product details: series 5, network and server tower UPS

Features	5PX 1000–3000 VA	5P 550–3000 VA	5PRM 550–3000 VA
Form factor	Tower, 2U rackmount or 3U rackmount	Tower	2U rackmount
Sine wave output	•	•	•
Intuitive LCD interface	•	•	•
ABM technology (50% longer battery life)	•	•	•
Load segment control	•		
Hot-swappable batteries	•	•	•
Start-on-battery	•	•	•
Audible alarms	•	•	•
Serial or USB port	Both	Both	Both
Intelligent Power Software Suite*	•	•	•
Network cards available	Mini-Slot	Mini-Slot	Mini-Slot
Data line surge protection	•	•	•
Remote emergency power-off (REPO)	•	•	•
Power distribution unit (optional)	•	•	•
Extended battery modules (optional)	•		
TAA-compliant models	•	•	•
Three-year warranty (with registration)	•	•	•
Extended warranty (optional)	•	•	•

* Intelligent Power Protector also works with these units and provides many of the same monitoring and management capabilities of Intelligent Power Manager.

9130 and 9PX

NC SR

Eaton 9130

700–3000 VA

Provides more available power, >95 percent efficiency, high performance protection and battery backup for unpredictable power in any IT environment

Typical applications:

- Small to medium business networks
- 911 call centers
- Remote IC locations
- Central IM location
- Mid-range telephone systems
- IP-based security systems
- VoIP equipment
- Lab equipment



Eaton 9PXSP

5–11 kVA

Split-phase models offer both 120V and 208V output without a transformer, saving vertical rack (U) space, weight and cost



Typical applications:

- Servers
- Voice/data networks
- Storage systems
- Cisco switches and servers

Eaton 9PX

2–11 kVA

Latest UPS innovation from Eaton features a graphical LCD interface, extended battery life and informed power management capabilities for easy management

This product is **TAA-compliant**.



Typical applications:

- Servers
- Voice/data networks
- Storage systems
- Cisco switches and servers



Eaton 9155

8–15 kVA

Provides industry-leading power density and a 75 percent footprint reduction versus comparable UPS solutions; internal batteries provide up to 350 percent more runtime and offer 13 percent more capacity at equivalent power ratings

Typical applications:

- Data centers
- Centralized servers
- LAN gateways
- Clustered PCs
- Enterprise telecommunications and engineering systems



Eaton 9170+

3–18 kVA

Grows with changing IT environments by incorporating scalable design of 3 kVA power modules and batteries; eliminates single point-of-failure with N+X power and logic redundancy

Typical applications:

- Mission-critical applications
- Internet service providers
- E-commerce networks
- Data centers
- Enterprise telecommunications systems
- Rack equipment



CUSTOMER TESTIMONIAL

"It's (9155 UPS) done everything we wanted—and more. It was a good match for our operations and a really good value."

- Shay Santos, assistant vice president, finance/IT Dane County Credit Union

Product details: series 9, network and server room UPS

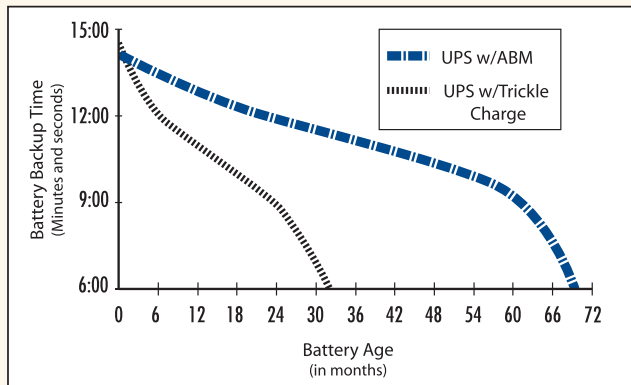
Features	9130 700–3000 VA	9PX 5–11 kVA	9155 8–15 kVA	9170+ 3–18 kVA	EX
Form factor	Tower	Rack/tower	Tower	Tower	Tower
Sine wave output	•	•	•	•	•
ABM technology (50% longer battery life)	•	•	•	•	•
Intuitive LCD interface	•	•	•	•	•
Hot-swappable batteries	•	•	•	•	•
Extended battery module (optional) ¹	•	•	•	•	•
Load segment control	•	•	•	•	•
Data line surge protection	•	•	•	•	•
Serial or USB port	Serial & USB	Serial & USB	Serial	Serial	Serial & USB
Start-on-battery	•	•	•	•	•
Audible alarms	•	•	•	•	•
Intelligent Power Software Suite	•	•	•	•	•
Communication bay	Mini-Slot	Mini-Slot		Mini-Slot	Mini-Slot
Remote emergency power-off (REPO)	•	•	•	•	•
Power distribution module (optional) ²	•	•	•	•	•
External maintenance bypass (optional)	•	•	•	•	•
TAA-compliant			•	•	
High-efficiency mode	•	•	•	•	•
Extended warranty (optional)	•	•	•	•	

1. Extended battery module not available for the 9130 700 VA Tower UPS.

2. Includes bypass switch; available with and without bypass switch on the 9155.

ABM technology—extend the life of your batteries and optimize recharge time

Most UPS manufacturers offer constant trickle-charge on their batteries, which degrades them and reduces their service life by as much as 50 percent. In contrast, Eaton's ABM technology uses sophisticated sensing circuitry and an innovative three-stage charging technique that extends the useful service life of UPS batteries while optimizing battery recharge time. It also provides advance notice of the end of useful battery service life to allow you ample time to hot-swap batteries without ever having to shut down connected equipment.



Extended battery runtime—increase your backup time

Your application may require several hours of backup time; Eaton can deliver it with extended battery modules (EBMs).



Load segments—extend battery time when necessary

Using our protection software, you can independently control load segments, which are groups of receptacles on the rear panel of the UPS. This feature enables you to maximize battery power and provide orderly shutdown and startup of critical equipment. During a power outage, you can shut down non-critical devices, extending available battery time to critical equipment.



To preserve battery power for critical devices connected to **Load Segment 1**, shut down the less-critical equipment connected to **Load Segment 2**.

Eaton single-phase UPS onsite service plans (US)

Features:

- 24x7 onsite coverage (anytime hours)
- Covers all parts and labor for both electronics and batteries
- Available as 8-hour or next day response
- Easy-to-order 2-year warranty upgrade or extension for up to 5 years of coverage



Warranty Upgrade

- 2-year length
- 24x7, 8-hour or next-day response



Flex Plan Post Warranty

- 1- or 3-year length (up to 5 years total)
- 24x7, 8-hour or next-day response

Details:

- Eaton single-phase UPS factory warranty is 2 years from date of purchase¹
- Eaton's 2-year warranty upgrade adds onsite coverage to standard factory warranty
- Eaton offers 1-and 3-year FLEX service plans for post-warranty coverage
- Purchase warranty upgrades concurrently with product purchase along with FLEX plans for up to 5 years of onsite coverage
- Purchase external battery coverage to complement UPS coverage

¹See Eaton limited warranty for specific details: 3 and 5 Series UPS models offer a 3-year warranty with online registration

Power management software



Intelligent Power Manager (IPM) software

Eaton's IPM software provides all the tools needed to monitor and manage power devices in a physical or virtual environment. This innovative software solution ensures system uptime and data integrity by allowing for remote monitoring, management and control of the devices in a network. IPM provides a solution that is easy to use and maintains business continuity.

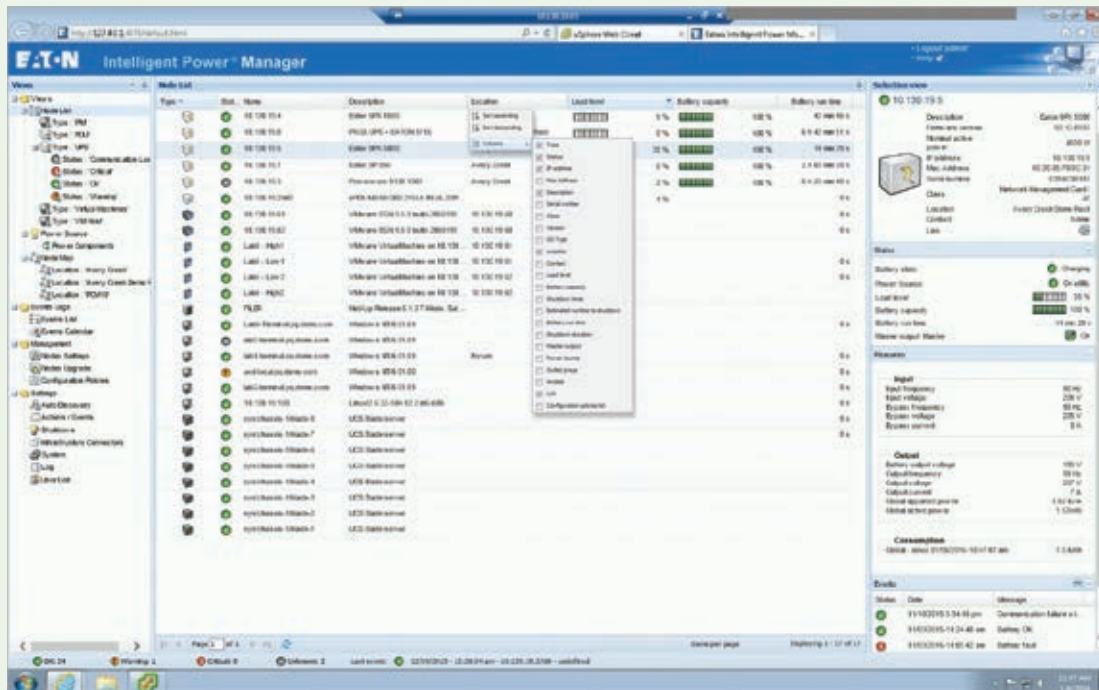
Benefits for virtual environments

Intelligent Power Manager's integration with virtual platforms enables data center managers to extend the runtime of their virtual network. They can also:

- Remotely monitor and manage multiple devices across your network from a single interface
- Suspend non-critical virtual machines, consolidate critical virtual machines and shut down unused servers to extend battery runtime
- Initiate a virtual machine move or graceful shutdown in the event of an extended outage
- Set server power consumption limits for extended battery runtime with Cisco UCS management software or HPE OneView
- Automate disaster avoidance with a planned migration application, such as VMware Site Recovery Manager and Microsoft Live Migration
- Integrate with VMware's vRealize Operations Manager using Eaton's Infrastructure Management Pack to manage health, risk and efficiency of power and environmental devices



Eaton.com/IntelligentPower



IPM features an intuitive user interface and puts power management at your fingertips.

Power management software



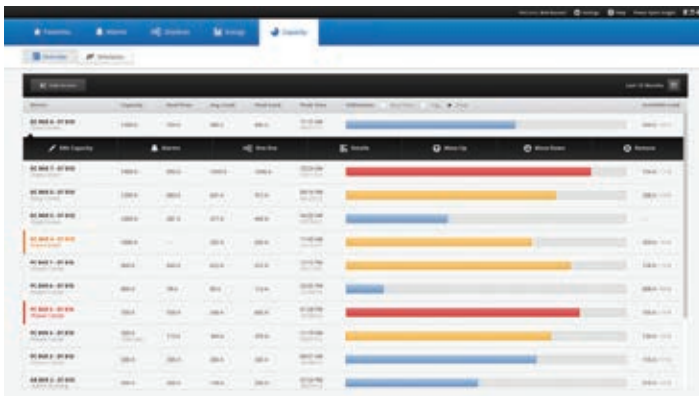
Power Xpert Insight®

Power Xpert Insight is a power and energy monitoring system that makes it simple to install, use, add new devices and obtain the information needed to make important operating decisions. Power Xpert Insight provides insight into electrical systems and takes the complexity out of power and energy management. This monitoring system allows users to view only the device information needed, simplify alarm management, view energy usage and demand data, compare and trend data and view a one-line representation of an electrical system.

IT managers can quickly assess the entire power system, including the traditional power management equipment—such as UPSs, PDUs and generators—for optimal operation. This provides them unfettered access to the information necessary to maintain optimal levels of efficiency, power consumption and power quality, all key to keeping a data center running smoothly and minimizing downtime.

Benefits:

- Keep the lights on with real-time, actionable alarms across desktop and mobile
- Save money and energy with reports that are simple to use and share
- Stay up to speed on your most critical devices with adjustable dashboards
- Drill into problems quickly with powerful graphics and detailed data
- Understand current issues and plan for future investments using trends and visualizations



The Capacity tab allows users to forecast, budget and plan capacity requirements while also being proactive in predicting overall electrical system performance.



Foreseer software screen

Foreseer® software

Foreseer software provides vendor-independent power and energy infrastructure integration capabilities. In addition, Foreseer comes with features that can help companies reduce energy consumption and unplanned downtime due to the failure of critical power, environmental, safety or security systems.

Foreseer software was developed from the ground up to support thousands of devices, connections, device parameters and data logging. It is fully scalable to support environment types all over the world—ranging from a single data center to multiple facilities. It facilitates monitoring of infrastructure pieces, including HVAC, UPS, power distribution systems (meters, motor control, variable frequency drives, etc.), generators, fire-detection, security systems and other communicating sub-systems from hundreds of manufacturers—all on one screen. For more information, visit Eaton.com/foreseer

Benefits:

Data center efficiency

Calculates DCiE and PUE

As IT managers are more focused on the energy efficiency of their data centers, the Foreseer software's Power Xpert® reporting option automatically calculates Data Center Infrastructure Efficiency (DCiE) and Power Usage Effectiveness (PUE). These industry-standard efficiency metrics help IT managers understand and track how efficiently their data center is running and how effective their improvement efforts have been to date.

Energy cost allocation

Fair share utility cost distribution

The cost of energy has always been of significant concern for those tasked with managing departmental budgets. Foreseer software provides users with energy usage by individual circuit, so each device can be a part of the energy management strategy. It even allocates electrical cost to individual and branch circuits, which can then be assigned to individual users of a department or device.

Power density

Pinpoint hot spots in your data center

As racks proliferate and expand from TCP/IP networks, servers and other elements of the infrastructure are placed into smaller areas, making power density a critical measurement. Foreseer software manages power density by device—for a single rack, floor or an entire building—allowing you to identify overloaded racks and incorrect power drains due to device failure.

Maintenance scheduler

Eliminate the hassles

The Foreseer software maintenance scheduler offers the ability to preset scheduled (weekly or periodic) maintenance windows within the system to disarm selected devices on which maintenance will be performed. Disarming the devices allows continued monitoring and archiving during the maintenance period, while disabling alarms and preventing unnecessary notification of personnel.

Foreseer sightline

Predict developing situations

Safety, environmental and electrical problems can be hazardous and costly, often resulting in unplanned downtime. Worse yet, these events seem to arise without warning. With Foreseer Sightline, users can project events, energy usage, environmental problems and safety issues—among other trends—based on current patterns up to 180 days into the future. With trending data in hand, users are able to define thresholds that will alert them to developing issues well before an actual alarm condition is reached.

Solutions for the changing global customer landscape

Eaton's connectivity products are accessory hardware options that link UPS products with external communication devices. These connectivity products help ensure communication compatibility with a variety of external devices through the web, serial, relays or SNMP.

ConnectUPS family of networking products

The ConnectUPS family of products seamlessly integrates UPS information to the Ethernet network and the Internet. This unique solution allows you to conveniently monitor and manage your UPS with a standard web browser, while simultaneously providing graceful shutdown for multiple computer systems over the network.



Modbus card

The Modbus card provides continuous, reliable and accurate remote monitoring of a UPS through a BMS or industrial automation system (IAS). The card integrates data from the UPS into the user-provided management system using the Modbus RTU protocol.



Relay interface cards

The relay interface cards are dedicated adapters that provide the essential dry-contact interface between your UPS and any relay-connected computer, including the AS/400, as well as a variety of industrial applications.



Environmental monitoring probe

The environmental monitoring probe enables you to remotely monitor environmental conditions. Using a standard web browser, you can view the ambient temperature (between -20°C and 80°C) and relative humidity (between 10 and 90 percent) of the remote environment, as well as the status of two additional contact devices, such as a smoke detector or open-door sensor.



Network Card-MS



Environmental Rack Monitor (ERM)

Eaton's ERM guards against environmental threats by continuously monitoring temperature and humidity at two locations in an enclosure, plus the status of up to four additional contact sensor devices (such as detectors for smoke, vibration or fire), for a total of eight sensors per monitor. In a typical rack application, the low profile, freestanding base unit can be placed horizontally or vertically in unused space. The temperature/humidity sensor units can be placed anywhere in the enclosure.

- Monitors environmental conditions to protect valuable assets from heat, humidity, smoke, vibration, water leaks or intrusion
- Displays real-time and historical status of all sensors to a PC, Internet-ready wireless device or Network Management System (NMS) software
- Aggregates real-time information from up to 100 ERMs in a single web page
- Automatically notifies designated recipients of out-of-range conditions via email, SNMP, PDA or pager
- Simplifies operations with an intuitive, web browser interface, rich graphing of data, auto-discovery and auto-aggregation utilities, and more



Environmental Monitoring Probe and Environmental Rack Monitor mounted on top of Eaton UPS

Power management connectivity



Power Xpert UPS card

The Power Xpert UPS card allows you to connect your Eaton Series 9 UPS directly to your Ethernet network and the Internet. With its built-in web server, the Power Xpert Gateway UPS card provides UPS information remotely, without additional software.



- Remotely monitors critical data such as: actual UPS energy usage, THD, multiple UPS modules with one card, load segment status, percent of full load, output power, battery status, alarm status
- Enables you to configure the shutdown agent, set up UPS shutdown schedules and test and control the UPS remotely
- Automatically maintains data, interval and event logs with time stamp for power and energy parameter analysis
- Integrates your UPS into existing building management or network management systems including Power Xpert Software (monitoring software)
- Expands your UPS' LCD to a fully-graphical, web-enabled, remote monitoring system



Power Xpert Gateway UPS card homepage

Power Xpert PDP card

The Power Xpert PDP card allows you to connect your Eaton power distribution products directly to your Ethernet network and the Internet.

With its built-in web server, the Power Xpert Gateway PDP card provides power distribution products' (PDP) information remotely, without additional software.



- Remotely monitor and record energy usage data to reveal opportunities and verify results of efficiency improvements
- Configure the Energy Management System through graphical, easy-to navigate screens rather than fumbling through a small LCD
- Web-enabled monitoring of power quality data down to the branch circuit level allows for safely tagging and monitoring individual circuit information
- Automatically maintains data, interval and event logs with time stamp for power and energy analysis
- Ability to integrate your PDP into existing building management or network management systems including Power Xpert Software monitoring software
- Expands your PDP's LCD to a fully-graphical, web-enabled, remote monitoring system



Power Xpert Gateway PDP card—panel view

Rackmount power distribution



Eaton ePDU

Eaton offers the largest selection of rackmount power distribution units available on the market, called Eaton ePDUs. This complete suite of power distribution products—including 0U, 1U and 2U form factors—is designed specifically for data centers and IT environments and provides manageability, control and power consumption monitoring at the outlet level. For more information, please visit Eaton.com/epdu.



These ePDUs are Cisco EnergyWise certified

Eaton's Metered Outlet and Managed ePDUs

Eaton offers two leading technologies for power distribution management at the rack enclosure level, Metered Outlet (MO) and Managed (MA) technologies. Both technologies offer outlet-level monitoring of power usage in kilowatt hours. They monitor critical factors such as voltage, current and power factor in high accuracy. This level of monitoring provides the granularity to understand your energy consumption. Specifically, it can reveal where extra capacity resides and allows you to assign power usage by customer, for example, an external customer within a colocation situation.



Each color-coded outlet section matches a corresponding circuit breaker in the new ePDU G3 models. This coding allows you to easily identify which circuit breaker feeds which outlets, and prevents unbalanced loading that could trip a breaker.

ePDU G3 Metered Input EMI301-10 shown

Daisy-chain capability allows up to eight ePDUs to share the same network connection and IP address reducing network infrastructure cost by 87.5%

ePDU G3's advanced LCD pixel display



Local buttons allow for easy menu navigation and simplify setup



Hot-swap meter is able to be replaced without powering down the rack (ePDU G3)

For more information about Eaton's newest ePDU platform, visit Eaton.com/epdug3



Rackmount power distribution



Understanding ePDU technologies

Eaton ePDUs are distinguished for their quality, dependability and versatility. Eaton ePDUs provide best-in-class power distribution, multiple technology options, an arrangement of outlets for every region, and the ability to manufacture custom ePDUs.

ePDU technologies

Increasing level of control

Feature (Value)	Basic	Metered*	Managed
Integrated IEC outlet grips (Easily secure plugs to prevent accidental disconnect)	•	•	•
Low-profile form factor (Provide zero interference into the rail space)	•	•	•
High 140°F (60°C) operating temperature (reduce cooling costs and maintain full functionality)	•	•	•
Color-coded outlet sections (Simplify load balancing)	•	•	•
Ease of installation (Quick, easy and flexible for most environments)	•	•	•
One percent billing grade accuracy (Optimize power utilization)		•	•
Advanced LCD pixel display (Allow for easy IP setup and troubleshooting)		•	•
Daisy chain (share network connection/IP address) (Reduce network infrastructure costs by 87.5%)		•	•
Hot-swap meter (Remove meter without disruption)		•	•
Phase and section metering (Control power utilization)		•	•
Measure power consumption at outlet level (Acquire precise data to make informed decisions)		Metered outlet only	•
Measure level 3 power usage effectiveness (PUE) (Transform billing into revenue or utility discounts)		Metered outlet only	•
Outlet switching (Remote on, off and reboot saves time and costs)			•
Turn off unused outlets (Control unauthorized use)			•
Remote site management (Save time from on-site visits)			•
Group reboot for A and B feed (Save time by controlling grouped power supplies)			•
	Good	Better	Best

*Includes Metered Input and Metered Outlet models

ePDU software options

Eaton offers a number of software management tools for you based on the number of ePDUs you need to manage.

Software	Rack quantity best supported	Type of software	Application	Cost
Web browser / email	1-25	Included requires web browser	Data closet small network stand alone	Included
SNMP	1-1000	Integrates to third party software	Small to large enterprise	Low-high
IPM	1-200	Eaton software free to try	Small to medium enterprise	Low-medium
Power Xpert®	100-1000	Eaton enterprise solution	Facility or large enterprise	High

Refer to pages 36-39.

Industrial ePDUs

Frequently used in test and measurement applications, Eaton offers a variety of industrial ePDU options, many which are designed to be controlled with remote emergency power off. In addition, Eaton offers a full range of products with this feature from basic North American models to three-phase international units. Use your own switches or simply plug our Remote Control Panel (RCP) into an ePDU.





The RPM offers 15 different receptacle plate options to meet specific applications.

Rack Power Module (RPM)

The RPM provides plug-and-play primary power distribution from a three-phase UPS or utility source to secondary power distribution devices (such as power strips) or directly to IT equipment. The resulting architecture has fewer cables to manage, fewer distribution points to monitor and greater flexibility for IT personnel to install and change the power distribution architecture.

- Distributes up to 36 kW of power from a panelboard or UPS with greater flexibility
- Enables modifications and changes to rack level power distribution to be made without hiring a licensed electrician



Multiple plug-in unit configurations are available to connect power to server cabinet loads with capacity to meet high power demands.

Pow-R-Flex busway

Eaton's Pow-R-Flex™ low ampere busway provides flexibility, modularity, safety and reliability. It meets all NEMA, UL, CSA and ISO requirements and provides flexible neutral ground options as well as multiple short-circuit withstand ratings that ensure coordination with any electrical system. In addition, Pow-R-Flex offers an extensive range of fittings to meet every application need.

- Pow-R-Bridge joint assembly and torque indicating bolt provide a durable, flexible, secure and easy-to-install connection
- Non-magnetic, all-aluminum housing provides for excellent heat dissipation and a significant reduction in reactance and magnetic flux leakage
- Totally enclosed conductors increase safety by preventing any incidental contact with live conductors
- Extruded housing channels provide simple and secure support and accessory connections
- Silver-plated contact surfaces provide high quality connections
- Unique hinge-housing design locks in one side of the cover, reducing fasteners and offering clean lines



System Bypass Module (SBM)

Four decades of experience in paralleling UPS systems is incorporated in this newest SBM. For use with multi-module 9395 systems, the new Eaton SBM allows the paralleling of up to 32 Eaton 9395 UPSs. The switchgear enclosure encompasses a centralized static switch along with system-level circuit breakers for bypass, UPS system output and maintenance, or wraparound bypass functions. Four ratings are available as standard: 2000A, 2500A, 3000A and 4000A. The customizable cabinet features a 10-inch color LCD screen for display status for up to eight uninterruptible power modules and provides an intuitive user operation interface. To enhance flexibility, the system controls/monitoring section may also be deployed in custom or third-party switchgear to ensure the most reliable monitoring and user-friendly controls are included with alternative power circuit components.

Flywheel solutions

When you need to ensure maximum productivity and system availability, Eaton's flywheel solutions can help. Our battery-free energy flywheel storage system bridges the power gap—acting as either a backup power source or backup battery source if power quality or delivery is disturbed. Flywheel solutions can also act as effective UPS battery enhancements, battery backup systems or UPS battery replacements for traditional systems.

Flywheel solutions are an environmentally friendly alternative to batteries, offering reduced energy consumption for cooling, elimination of lead use in facilities and a long lifespan of more than 20 years.

Use flywheel solutions to take advantage of:

- Minimal space requirements due to the flywheel's high power density in a small, light footprint
- Low costs made possible by reduced maintenance requirements and long service intervals
- High efficiency, operational integrity and reliability—with 20 times the reliability of a single bank of batteries
- Simple plug-and-play installation

Power Distribution Unit (PDU)

The Eaton PDU series can be easily expanded as power needs change by adding up to three side-cars. This expands the distribution capacity from 84 to up to 252 circuit breaker pole positions. Each PDU can be configured to meet your specific needs for isolation, voltage transformation, harmonic reduction and voltage regulation with virtually limitless distribution options. Built-in system monitoring and diagnostics facilitate load balancing and warn of potential threats to your critical equipment.



Remote Power Panel (RPP)

The Eaton RPP allows for electrical expansion without the need for costly electrical rework. By simply feeding the RPP distribution module from the existing transformer or panel board, distribution capacity can be expanded by up to 168 pole positions.

Hot Tie Cabinet

The Eaton Hot Tie Cabinet is an ideal solution for two UPS modules powering two separate loads, allowing you to transfer the load of one unit to the other so the loads are always protected. The Hot Tie Cabinet has become more important than ever with the development of Powerware Hot Sync technology, as it enables two systems whose units are paralleled with Hot Sync to work together for an even greater level of redundancy and protection.

Static Transfer Switch (STS)

The Eaton STS is a high-speed switch that can transfer electrical loads from one AC power source to another in a fraction of a single electrical cycle. The STS eliminates the chance of a loss of power to critical loads by properly coordinating with the electrical distribution system. During a fault condition, the STS continues to conduct current, allowing downstream circuit breakers to work selectively.



Eaton: Transforming your infrastructure management

As the fifth element of converged infrastructure, we've partnered with the leading CI creators for the ultimate power protection. In addition, our validated hyperconverged solutions help you save time, save money and reduce risk by reducing your IT footprint, simplifying operations and eliminating downtime.

1
Virtualization



To learn more, visit Eaton.com/CI

2
Compute



3
Networking



4
Storage



5
Integrated power management



- View and manage your entire power system in your existing dashboard
- Powerful, integrated and scalable solutions to properly protect your IT infrastructure and maintain business continuity
- Remotely manage power usage, cycle hung servers and maintain control of your infrastructure





Eaton's Witness Test Centers allow you to see your large multi-module system tested before it's deployed.

Data center and facility UPS overview

With a rich history of technical innovation and proven performance, Eaton's data center and facility UPS products continue to personify its pioneering spirit in the power quality industry. Whether you're designing or procuring a UPS, models can be deployed around the world since they're designed to meet global requirements. That means the same UPS can be installed anywhere—from Argentina to Russia, China to South Africa or the United States.

Leading sustainability

- Highest efficiency ratings lower utility costs
- Lowest total cost of ownership and lifecycle carbon footprint
- Smallest footprint and weight
- Lowest transportation and installation costs

Stronger power performance

- Lowest input total harmonic distortion (THD) enhances compatibility with upstream power systems
- Lowest output THD
- Optimum generator sizing
- PFC power supply compatibility

Highest reliability and availability

- Powerware Hot Sync wireless paralleling
- Easy capacity test
- Superior battery management
- Inherent redundancy
- Scalable architecture that adapts to increasing power requirements

Robust manageability

- Superior control and connectivity

Beyond technology: Eaton multi-module UPS solutions

In the world of large power systems, single-unit solutions are becoming less common. High-capacity power needs, redundancy requirements, integration into building management system (BMS) and network management systems (NMS) for system monitoring, data gathering, and extended battery backup time often lead customers to a multi-module system that can include redundant UPSs, software, power distribution and battery systems tailored to individual needs.

Designing, testing and implementing a multi-module system requires engineering knowledge and experience in making sure everything works together as anticipated, every time. That's where Eaton excels—starting with state-of-the-art technology and pairing it with rigorous design, testing and implementation standards guarantees Eaton multi-module systems deliver the highest level of reliability.

When you choose a custom Eaton solution, you come to the Customer Witness Test Center in Raleigh, North Carolina, or Helsinki, Finland, to see your system put through its paces. This gives you hands-on experience and the confidence that the system will operate efficiently and trouble-free from day one.

Eaton Customer Witness Test Centers test power modules, including UPS, PDU, switchgear, static transfer switches and battery cabinets. They also test third-party equipment interfaces, a crucial capability in a multi-vendor world. In addition to testing the individual devices, the entire system is tested, ensuring end-to-end interoperability.



Feature focus

Eaton three-phase UPS products are packed with features and available options to integrate easily with a wide array of site requirements. Industry-leading technologies and performance allow consultants and contractors to exceed customer expectations and deliver more value.

For example, Energy Advantage Architecture is a suite of options, technologies and designs that allow specifying engineers and facility managers to get the best possible performance from their UPS. Options like Energy Saver System (ESS) dramatically increase UPS efficiency without sacrificing protection, reducing energy costs and putting money back into the budget. In addition, site designs using 400V can capture savings in equipment and operating costs that can dramatically improve end-to-end facility efficiencies.

The Power Xpert 9395 high performance UPS model

The 9395 high performance UPS shown below can be configured as an 1100 kW capacity or 825 kW for N+1. The width of this configuration is a compact 170.1



Eaton's 93PM: small footprint and weight

Eaton's 93PM UPS system combines efficiency, reliability and vertical or horizontal scalability with an eye-catching design. With lower TCO and ease of deployment and management, the 93PM is a space-saving and flexible solution, offering unprecedented backup power in a small footprint.

Big power, small footprint

Eaton 93PM

Weight = 869 pounds
22 in. x 42 in.

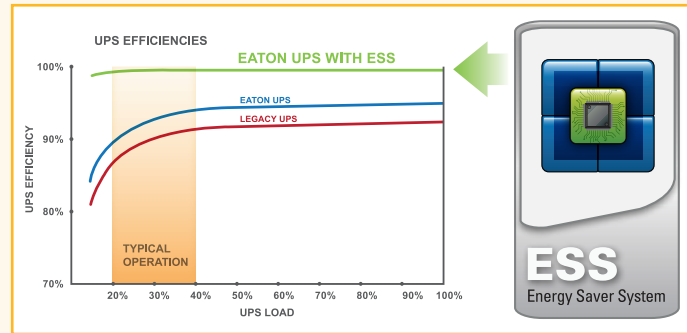
Competitor product

Weight = 1400 pounds
41 x 39 in.



Energy Saver System (ESS)

Eaton three-phase UPS solutions have always delivered excellent energy-efficiency, helping facilities save thousands in energy costs over traditional UPS designs. Now with the available ESS option, Eaton three-phase UPSs achieve more than 99 percent efficiency no matter how large or small the load. This additional energy savings is achieved through advanced power core technology and continues to provide the load with maximum protection. Unlike traditional “eco” modes, ESS is not just a utility bypass. The load is always protected. Learn more at Eaton.com/ESS.



All models on this page are TAA-compliant.



Eaton 9355 10–30 kVA

Delivering efficient, reliable performance in a sleek tower half the size of most competitive units on the market today, the 9355 can be deployed to protect small data centers, multiple servers, educational facilities, critical machinery in factories and retail applications.

Emergency Lighting UPS (UL 924) models now available from 8–30 kVA.



Eaton 93E 20–60 kVA

The Eaton 93E UPS delivers the most efficient power quality solution in three key areas: space, power and cost. Engineered for maximum efficiency, the 93E delivers up to 98 percent efficiency while maintaining a small physical footprint. With internal batteries up to 60 kVA, the 93E provides an all-in-one solution that also reduces the complexity of installation and startup.

CUSTOMER TESTIMONIAL

“We have no extra space here and we were going to have to retrofit another area to accommodate a new UPS. But because of the 9355’s form factor, we were able to put in right into our computer room and we didn’t have to modify any of our other systems around it.”

- Pat Abban, senior technician, Genzyme

Eaton 93PM

20–400 kW

The Eaton 93PM UPS combines unprecedented efficiency and reliability with an eye-catching design. A space-saving, scalable and flexible device that's as easy to deploy as it is to manage, it's the perfect three-phase white or grey space solution for today's data center.



- **Lowest total cost of ownership:** Conserves valuable data center floor space with its compact footprint and internal redundancy design. Reduces cost and unexpected future growth risks with its vertical scalability, enabling you to scale as you grow. Reduces power and cooling OPEX through industry-leading energy-efficiency.
- **Easy deployment:** Maximizes deployment flexibility by providing flexible configurability.
- **Easy management:** Provides easier access to detailed status information through its large, user-friendly LCD touchscreen interface. Integrates with the leading virtual platforms through its full suite of power management and connectivity software. Increases uptime through its 24x7 remote monitoring and reporting capabilities.



Emergency lighting UPS (UL 924) models now available from 20-120 kVA. Auxiliary-listed models are also available from 20-200 kVA.

Eaton.com/93PM

CUSTOMER TESTIMONIAL

"The 9395 alone provides about a 10 percent gain in efficiency over our previous unit. And with ESS, of course, that goes all the way to 99 percent, which would be about a 15 percent increase. It's huge."

- Kevin Dorhmann, chief technology officer, CoSentry



An Eaton Green Solution

Power Xpert 9395

200–1200 kVA

Now available in a high performance model, the Power Xpert 9395 UPS boasts industry-leading efficiency and scalable battery runtimes, providing more power to support more racks in large data center environments within the same small footprint.



All 480V high performance models are ENERGY STAR qualified. Additionally, the 275 kVA 9395 model is ENERGY STAR qualified.

CUSTOMER TESTIMONIAL

"This UPS (Eaton 9390) has worked flawlessly, it has been rock solid. It's never missed a beat on anything. Frankly, I wish everything we had worked like this. It's truly performed beyond our expectations."

- Jerry Smith, senior network engineer, Farmers Telecommunications Cooperative



Eaton 9390

20–160 kVA

The 9390 combines extensive customer research with technical innovation to deliver power protection for medium-sized data centers, general IT applications, healthcare applications (such as CT scanners), banking infrastructure, colocation facilities, hotels, casinos and even marine applications.

Eaton.com/bladeups

Eaton BladeUPS

5–60 kW

The revolutionary Eaton BladeUPS® power quality system expands power protection from 8 kW to 60 kW (N+1) in a single industry-standard 19-inch rack. Equally important, the BladeUPS provides this robust, compact solution while generating 75 percent less heat than the competitors' legacy end-of-row solutions.



- Reduces single points-of-failure with an intelligent bypass design that eliminates human error
- Provides Powerware Hot Sync paralleling that enables scalability and reliability through a "peer-to-peer" paralleling relationship
- Features hot-swappable battery modules and electronics
- Uses off-the-shelf options, including line cord kits, X-Slot cards, extended battery modules, racks, sub-distribution and rack power strips



Easily remove power modules or hot-swappable batteries without disrupting power to the unit.



8–60 kW BladeUPS models are ENERGY STAR qualified.



CUSTOMER TESTIMONIAL

"Aside from industry-leading power performance, the deciding factor in choosing BladeUPS was its modular design and built-in bypass capability. With a modular system there are no downtime requirements, and when additional capacity is needed, you simply plug in another module."

- Ray Graham, IT consultant for Carolina Hospital System

BladeUPS Preassembled Systems

Eaton has expanded the BladeUPS product offering and simplified it for easy customization, shipping and installation. The Eaton BladeUPS Preassembled System is a truly turnkey solution for growing data center needs. Depending on your power requirements, preassembled systems can be ordered with one to six BladeUPS units installed to offer the right level of power protection, while still providing for future growth. All you have to do is bring power to the unit and perform the simple start-up procedure.



Features

- Factory pre-tested system accelerates installation and minimizes onsite testing requirements
- Save up to 20 percent in shipping costs
- Modularity and scalability allow the system to be easily moved
- Top- and bottom-entry models available
- The top-entry models are ideal for data center environments that do not have a raised floor and offer a flexible option when facing moves, additions or changes to the data center



Preassembled system ready for shipment.

Prefabricated power solutions

Eaton's prefabricated power solutions combine several products to support shorter lead times, faster deployment, lower total cost of ownership and reduced risk during design and implementation. And since they're pre-configured setups that are each tested as a system, you get consistent, repeatable designs that can be mirrored across multi-phase and multi-location sites.

Learn more at Eaton.com/prefab.

Ideal for all sizes of data centers, these solutions come in three configurations:

1 Connected

- UPS modules and switchgear
- Up to 5,000 amps
- Customizable



2 Centralized

- UPS, batteries and switchboard on a skid
- Up to 550 kVA



3 Contained

- UPS, batteries, switchgear, HVAC units and fire and safety equipment in a container
- 825 and 1100 kVA power ratings

Surge suppression

Eaton SPD Series

The SPD Series offers the most advanced surge protection with an array of features, options and configurations. Applying these units throughout a facility will ensure equipment is protected with the safest and most reliable surge protective devices available. They can be installed directly into electrical assemblies or externally side-mounted to equipment.



Panelboard with side-mount SPC Series surge protective device.



SPD Series unit installed in a panelboard, providing optimum surge protection without the need for an additional enclosure.



SPD Series side-mount surge protective device providing superior retrofit surge protection.

Eaton PSPV

The SPC Series offers robust protection in a compact, flexible design that's configurable for a range of applications and requirements. Units can be easily close-coupled to distribution equipment, keeping the connected lead length short for maximum performance, and include tri-colored protection status indicators. They also meet standard industrial specifications.

Power factor correction capacitors and filters

Capacitor and electronic means of power factor correction provide well-known benefits to electric power systems, including correcting the power factor, reducing poor power factor utility bill penalties, voltage support, system capacity release and reduced system losses. A high power factor signals maximum use of electrical power, while a low power factor leads to purchasing more power to obtain the same load kW, which you pay for in various ways on your utility bill.

Visit Eaton.com/PFC for more information and to request a free power factor site evaluation.



The Eaton Unipump is a non-fused capacitor based product designed to be used at the motor locations of outdoor irrigation, oil field installations or other weather restricted areas requiring power factor correction at the motor load.



Unipaks are capacitor-based products designed to be used when fixed, static capacitance (wall or floor mounted) is needed within parts of your electrical system.

Power Xpert Meter 4000/6000/8000

Eaton's Power Xpert Meter 4000/6000/8000 series represents world-class power monitoring that reduces day-to-day operating costs and helps avoid costly business interruptions. The meters combine state-of-the-art technology with an embedded web server, advanced power diagnostics, data trending and performance benchmarking, along with a twist-n-click LCD for simplicity and ease of use.

- Free download of Power Xpert Meter Profiler to trend and predict energy usage
- Embedded web server
- Automatic power quality analysis and trigger setting with built-in ITIC performance curve
- Comprehensive power, energy and demand measurements for 138 standard data points logged
- At-a-glance view of power quality analysis with patented Power Quality Index gauge
- Industry-standard communication protocols to support a multitude of configurations and third-party software: HTTP, FTP, Modbus RTU, Modbus TCP, SNMP, SMTP, NTP, COMTRADE



Power Xpert Meter 2000 series

The meters combine state-of-the-art technology with waveform viewing and recording, data trending and performance benchmarking. The embedded web server enables users to surf to the meter over the Internet via a standard web browser. This platform offers adaptability such as field-upgradeable firmware and optional digital inputs/outputs and analog outputs.

Identify power quality problems to help

- Protect motors from damage
- Preserve the integrity of processes and batches
- Prevent blown capacitor bank fuses
- Protect transformers and conductors from overheating



IQ 250/260 series

The IQ 250 and IQ 260 electronic meters provide capabilities you wouldn't normally expect in an affordable, compact meter—such as fast sampling rate and accurate metering for a full range of power attributes. The meter can be configured either from the easy-to-read display or remotely (accessible via a Power Xpert Gateway) via included configuration software. In addition, built-in slots allow for upgrades to input/output option cards.

- Comprehensive metering
- High-end accuracy
- Large, easy-to-read display
- Local or remote configuration
- Industry-standard communication protocols (Modbus)
- Mix-and-match input/output options
- Field-upgradeable



IQ 100 series

Providing the first line of defense against costly power problems, Eaton's IQ 100 electronic power meters can perform the work of an entire wall of legacy metering equipment utilizing today's technology. Eaton's IQ 100 meters use 24-bit AD converters that sample at more than 400 samples per cycle and meet ANSI C12.20 standards for accuracy of 0.5 percent. With such high-performance measurement capability, these meters can be confidently used for primary revenue metering and submetering applications.

Applications

- Utility and commercial metering
- Substations, industrial facilities, power generation sites and campuses
- Submetering
- Load studies and voltage recording
- Analog meter replacement



Enclosed Meters

Designed for the IQ 35M, IQ 150, IQ 250/260 and Power Xpert Meter 2000, Eaton's single and multi unit Enclosed Meter offers mounting and installation flexibility, especially in retrofit applications where no metering compartment or mounting space is available in the existing electrical distribution equipment or where installation time is a premium. Factory-designed and wired, Eaton's Enclosed Meter offers savings in labor and installation costs since input current and voltage wiring as well as I/O wiring is pre-wired to terminal blocks inside the enclosure. To ensure safety, Eaton's Enclosed Meter includes a primary breaker for line voltage that can be turned off during meter maintenance.

Applications

Standalone, enclosed meters are ideal for new metering applications where no metering existed previously, for retrofit installations or where ease of installation is required.



The Eaton RS Enclosure

Designed to organize, protect and manage critical IT applications

NC SR



Easy-to-configure

power, cabling and airflow

Whether you have a network closet, server room, or multi-tenant data center, the new Eaton® RS Enclosure provides an easy-to-configure solution for IT equipment storage. RS features tool-less configuration, optimized mounting for power distribution, flexible cable management solutions and security provisions.

Solution highlights >



Power-optimized design

Today's increasing power densities require flexible ePDU rack power distribution mounting and cable management solutions. RS provides:

- Multiple ePDU mounting options and out-of-the-box installation for ePDUs
- Pathways for cable ingress and egress at the top and bottom of the enclosure to accommodate large connectors and cable loops
- Tool-less ePDU mounting brackets with integrated cable management



Tool-less configuration

To reduce installation time, RS supports tool-less configuration of all key enclosure components, including:

- Mounting rails and ePDU brackets
- Doors, top panels and side panels
- Cable management and airflow accessories
- No downtime searching for tools to reconfigure IT equipment



Application-specific solutions

Easy, single part number ordering for application-specific configurations.

- **Server** – cost-effective base configurations with PDU mounting, airflow and cable management options
- **Network** – includes robust cable management solutions to manage medium-to-high density requirements
- **Colocation** – a secure and flexible combination lock addresses the security needs of colocation customers

For more details on Eaton's RS Enclosure, please visit Eaton.com/RS

Racks and accessories



Eaton Paramount enclosure system

Our premier enclosure platform, Paramount not only supports an industry leading 2,200 pounds of equipment in a fully welded frame, but it is also designed to adapt to the ever-changing requirements of the data center through a scalable and modular approach. Speed of deployment is essential to any company when considering time to market. Paramount's modularity and building block design ensures quick reconfigurations and minimizes downtime, protecting your initial investment.

- Superior airflow control and management
- Flexible platform allows for ever-changing requirements, protecting your initial investment
- Industry leading weight capacity of up to 2,200 pounds handles even the heaviest server equipment
- Guaranteed compatibility with TIA/EIA-310-D* standard size equipment
- Eaton's patented Heat Containment System (HCS) cools up to 25 kW or more per enclosure, without the expense of adding supplemental CRAC units to your data center
- Full complement of accessories to handle non-rackmount devices
- Industry leading cable access and management



Eaton Vantage S2 enclosure system

The Vantage S2 enclosure platform was designed with change in mind, which is why so many Fortune 500 companies have standardized on it. This scalable enclosure solution helps store the latest technology without having to change enclosure platforms, maximizing your original investment.

- Provides superior airflow with its fully perforated front and rear door system
- Fully welded frame rated for a 2,000-pound static and dynamic load capacity handles even the heaviest server equipment
- Guaranteed compatibility with TIA/EIA-310-D* standard sized equipment
- Eaton's patented heat containment system cools up to 25 kW or more per enclosure, without the expense of adding supplemental CRAC units to your data center



Compatibility Guarantee

We guarantee that all 19" TIA/EIA-310-D compliant equipment will physically fit into the Paramount and Vantage S2 enclosures.



Eaton two-post racks

These durable racks are designed to meet a variety of application requirements from enterprise data centers to colocation facilities to network closets. Cable management is one of the critical functions of two-post racks, and we offer vertical and horizontal management systems to increase flexibility and optimize performance.

Eaton two-post seismic racks

The seismic 19-inch, two-post relay rack is designed for areas where shock and vibration are a factor, such as power plants and airports. Seismic enclosures protect your electronics by providing enhanced frame strength and rigidity with reinforced dual uprights. Eaton's seismic two-post rack It's tested to GR-63-Core shock and vibration to a load of 900 lbs.

Eaton four-post racks

Whether you're working in a network closet, server room or data center, a few common needs exist where enclosures are concerned: accessibility to equipment, sufficient airflow, design flexibility and cable management, to name a few. Eaton's four-post rack addresses these needs while also accommodating other Eaton equipment and cable management accessories.



Eaton wall mount cabinets and racks

Eaton's wall mount equipment is a cost effective, secure way to mount communications cabling, networking gear and related equipment to conserve floor space. It's designed to work with network, IT, telecom, datacomm, A/V or other applications. Wall mount cabinets provide a secure enclosure with protection from tampering and other hazards, while open-frame swing gate wall mount racks offer easy access to and unrestricted airflow around mounted equipment

Racks and accessories

Blanking panels

Blanking panels provide a quick, easy and cost-effective solution to optimize air circulation within an enclosure while maintaining high aesthetics. Eaton offers blanking panels in a variety of styles including tool-less, mechanically fastened, clear and with cable pass through options in steel as well as plastic. The width meets EIA-310-D standards and they come in various heights (depending on style). Most panels are bulk packed in quantities of 10 and 100.

- Significantly reduces re-circulation of hot exhaust air to the equipment inlet
- Adds to the overall aesthetics of the data center
- 1U, 2U, 3U, 4U, 5U, 6U, 7U, 8U and 20U (depending on style)
- EIA-310-D compliant for 19" equipment
- Color: Black steel, black plastic, clear plastic
- Available in tool-less, mechanically fastened, clear and cable pass-through styles



Brush strip models allow routing of cables through the panel.



Adjustable blanking panels, offered in two sizes (7-12U, 12-22U), easily adapt to your hardware requirements.

Raised floor grommets

By installing Eaton's raised floor grommets, you can optimize the effectiveness of existing cooling equipment and manage increasing heat loads. The raised floor sealing system specifically addresses bypass airflow and its detrimental effect on data center cooling.

- Increased energy efficiency and predictability—eliminates bypass airflow while maintaining a consistent subfloor plenum pressure
- Flexible, thoughtful design—overlapping serrated fingers and optional plastic ties adapt to any size or shape cable bundle; ties ensure a complete and lasting seal by providing tension against the cabling
- Superior performance—delivers a faster and greater ROI than any other solution on the market



Non-permeable material allows maximum pressure to be maintained in the sub-floor plenum when cables are installed, minimizing bypass airflow.

Aisle containment

End of row doors

End of row doors create more efficient cold aisles by blocking an obvious cold-air escape route and entry for hot air re-circulation and air mixing. This allows you to set a higher overall temperature within the data center thus saving energy and extending hardware life.

- Variety of door models—choose from three styles of doors—single-swing, double-swing café style and sliding doors
- Ease of installation—field-installable, rack-integrated and freestanding options available
- Rack agnostic—flexible enough to install almost anywhere on any manufacturer's brand enclosure
- Improve efficiency and predictability—increases cold air intake efficiency, from the bottom of the enclosure to the top, within the cold aisle
- Minimize air re-mixing—cost-effectively minimize air mixing between the hot and cold aisle while keeping the uniform cold air supply in front of the servers for a consistent temperature top to bottom



Our space-efficient sliding end of row doors open with little effort and offer a self-close option. They are a great choice when end-of-row space is at a premium and air containment is required at the end of a cold or hot aisle.

Aisle containment ceilings



Eaton's ceiling system is comprised of clear panels made from materials with multiple ratings, including UL94 V-0, ASTM E 84, FM4910 or antistatic. The panels mount easily to the top of Paramount, Vantage S2 and third-party enclosures. This ceiling system is modular and scalable to accommodate differences in rack heights and row spacing. The self-supporting structure allows for easy rack changes within the row. Fire-activated ceiling panels ensure quick row access for critical fire suppression.

CRAC collars

The CRAC collar for downflow systems is integral to Eaton's total containment solution. By containing and directing the warm plenum air to your air conditioning system you increase efficiency and equipment performance while reducing overall energy consumption.

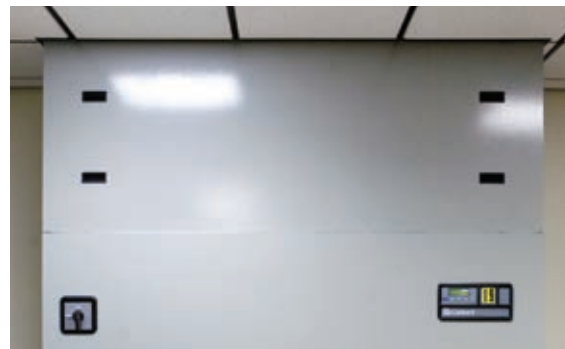
The CRAC collar features an integrated design, comprised of steel panels that mount easily to the top of any CRAC unit with simple installation. Collars allow front filter installation and service and completely integrate with optional airflow dampening devices. This closed-loop integration of the air conditioning supply and exhaust completes the modular airflow containment strategy in the data center, resulting in a more energy-efficient operation.



Single-swing end of row doors are a simple, cost-effective solution to improve efficiency while lowering overall operating costs.



Eaton's double-swing café style doors help achieve aisle containment while offering quick entry and exit.



Tool-less access panels allow quick and easy installation on your existing CRAC units.



Independent Containment System (ICS)

The culmination of Eaton containment strategies is its patent-pending ICS, a free-standing, scalable, sustainable and vendor-neutral containment solution for high-density computing environments.

Designed to provide maximum flexibility in all environments, the ICS, assembled within the footprint of a standard aisle, is constructed with a tubular steel frame. The frame's structure is designed to be freestanding and meets seismic NEBS Zone 4 standards. Additionally, it accepts a variety of Eaton's End of Row Doors including café style, swing and sliding models.

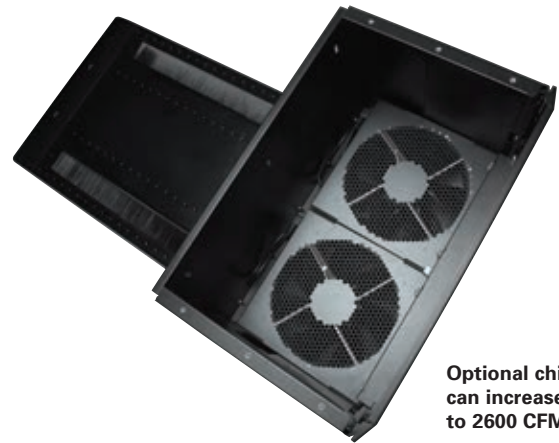
Aisle ceilings are constructed of a light-weight steel frame and clear Lexan panels allowing ambient room light to illuminate the ICS aisle, eliminating the need for energy-consuming supplemental lighting. The ceiling accepts 2' x 2' aisle ducts which can be added anywhere on the ceiling structure as IT loads increase.

Eaton Heat Containment System (HCS)

Eaton's HCS is a simple, scalable and low cost rack-based solution to cool up to 25 kW or more per enclosure without the expense of adding supplemental CRAC units to your data center. This patented technology is available on Eaton's Paramount and Vantage S2 enclosure systems and can also be field retrofitted to most manufacturers' enclosures. The HCS contains and directs the heat exhaust of your IT equipment through the chimney that is attached to the top rear of the enclosure. The hot air is then ducted to your existing CRAC units through a plenum ceiling or high air returns.



Photo courtesy of Humana



Optional chimney fans can increase airflow up to 2600 CFM

- Scalable—adapts to existing infrastructures to increase rack utilization as your capacity demands grow
- Predictable—separates hot exhaust air and cold supply air, dramatically increasing the reliability of the data center
- Efficient—allows hotter air to return directly to the CRACs, increasing their efficiency by operating at a higher Delta T (ΔT)
- Reliable—extends existing cooling capacity throughout the data center, freeing up stranded assets and lowering operational costs
- Flexible—does not require you to alter existing enclosure locations and is also field-installable on third-party enclosures

Active Airflow Manager

Eaton's HCS pressure based system with active airflow, when combined with best practices, improves performance metrics considerably. Allocating the correct amount of airflow at known intake locations is key to reducing energy consumption while increasing equipment performance. Best practices such as blanking panels, proper perforated tile placement and the reduction of bypass airflow must be employed to ensure desired results.

- SNMP managed device with user-friendly web interface
- Controller continuously monitors pressure differentials to ensure that air entering the enclosure and server is properly removed
- Local LEDs indicate fan status including fan fail and over temperature
- Manage up to 64 peer Active Airflow Managers via Ethernet
- Two integrated temperature sensors with e-mail alert capabilities
- Redundant power input; C13 plug type is required for each input, 90-240 Vac supplied by enclosure PDU(s)
- Controller is RoHS compliant



HCS for third-party racks

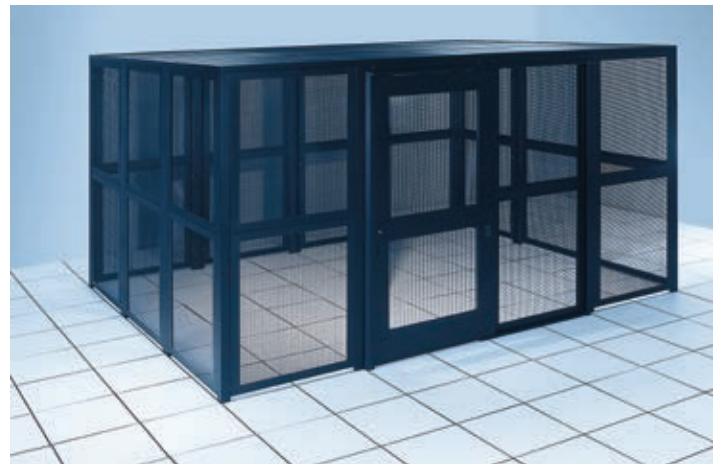
Convert existing enclosures to the HCS to eliminate incremental capital expense associated with having to add more CRAC units or other supplemental cooling.

- Implement heat containment with minimal interruption to operations by building up from existing enclosures without having to re-route or disconnect cables and power
- By isolating the hot exhaust air from the cold supply air, you can load more than 25 kW of equipment in an enclosure
- Requires no additional air conditioners or other space consuming supplemental equipment at the perimeter of the data center, in-row or overhead
- Eliminates chaos airflow results in a more predictable operating environment, allowing you to drive efficient energy use and create a reliable infrastructure for moves, additions and changes

Data center cages

Eaton cages provide secure partitioning for data centers, providing the ultimate level of security for your valuable information systems. Built to the durable standards of our enclosure systems, the rugged steel construction ensures structural integrity. Its unique design, with 3/8" perforations, is large enough to provide ample ventilation while maintaining a secure structure.

- Secure data center segmentation
- Modular design for easy reconfiguration
- Multiple standard height and width options (7', 8', 9', 10' heights and multiple widths)
- Ceiling and wall-mounting capabilities
- Multiple access control options
- 1½" clearance for floor tile access





Proper preventive maintenance reduces the risk of UPS failure through thorough inspection, cleaning, testing and calibrating various electronic and mechanical components.

Eaton's comprehensive, world-class service solutions for all Eaton AC, DC, software and connectivity products are designed to improve costs, uptime, reliability, power quality and safety. We demonstrate our commitment to strong, lasting customer relationships through our technical expertise and expansive support network. With 240 field technicians in North America, 1,200 international authorized service providers and more than 100 dedicated customer support team members, we have more service personnel than any other UPS manufacturer.

Count on our proven performance

Our customers consistently rank our services number one in quality. In fact, they've rated our quality of service at 95 percent or higher since 1999 (based on returned surveys from clients who used services). More than 97 percent of Eaton service contract customers (Eaton large systems) renew their service contracts each year.

From assisting you with determining your power quality needs to sales support, order management, choosing a servicing plan and installation, we'll stand by you every step of the way.

To back our service excellence after your UPS is up and running, Eaton invests hundreds of thousands of dollars each year in our field technicians—requiring each new technician to complete 24 weeks of training before becoming certified and being placed in the field. To minimize mean time to repair, Eaton provides the latest technologies in scheduling, call management, parts optimization and remote diagnostics.

Enhance reliability and performance with multiple service plan options

At Eaton, we deliver service 24 hours a day, 7 days a week, when and where you need it. Our services include onsite startup, corrective and preventive maintenance, battery solutions, training, remote monitoring and factory spare parts and upgrades. In addition to our UPS services, we offer extensive engineering, product management and integrated power systems solutions to deliver reliability, improved operations, cost savings and asset optimization for your facility and your business.



In winter, the Mt. Washington Observatory is an ice and snow palace, battered by hurricane-force wind gusts.

Success story: Mt. Washington Observatory

Located at the summit of a 6,228-foot mountain, the Mt. Washington Observatory (MWO) is home to the world's worst weather, with recorded wind gusts of 231 mph and an all-time low temperature of -50°F. That makes it difficult to reach (especially in winter) and maintain reliable power supply and quality.

MWO deployed a 15 kVA Eaton 9355 UPS years ago with more than 170 minutes of runtime to help ensure that even when the most extreme weather hits, the organization can continue gathering and storing vital weather data that it reports to the National Weather Service. While the 9355 performed flawlessly through the years, by 2014, its batteries needed to be replaced. The MWO IT team reached out to Eaton to arrange a battery replacement and get the UPS on a service plan.

Ahead of the replacement, we conducted a site assessment and power usage study to determine the battery backup time required. Discovering that MWO had reduced its equipment and adjusted its generator use since the UPS was first installed, we determined that 90 minutes of runtime—rather than the originally slotted 170 minutes—would be more than sufficient.

On the scheduled day of service, two technicians trekked to the top of Mt. Washington with four new strings of batteries. They safely removed 32 trays of batteries and two cabinets—about 3,840 pounds of materials—helping MWO significantly consolidate its UPS solution. They also performed comprehensive preventive maintenance on the 9355 as part of a new, two-year service agreement, added an environmental monitoring probe and upgraded MWO to Eaton's remote monitoring service.

New batteries combined with the support of Eaton's service and remote monitoring teams now put MWO in an excellent position to preserve its 80-year weather history and capture as much data as possible during extreme weather. Watch this video for the full story: Eaton.com/MWO.



Replacement batteries for optimal performance

The single most critical element of UPS performance is battery quality. All it takes is one bad battery to ruin an entire string and bring your systems down during a power outage or other interruption. Battery failure is the number one cause of UPS load loss and system downtime.

Battery performance varies greatly from one manufacturer to another. Making the wrong decision on batteries can have a serious impact on UPS uptime reliability, causing potentially devastating consequences from power interruptions. That's why Eaton offers a line of qualified premium batteries for use with Eaton UPS models.

Eaton continuously scans the globe to ensure the highest-quality batteries are available and qualified for use. As new batteries are introduced, we apply a proven qualification process, testing them with our products to verify that they meet or exceed manufacturer specifications and supply maximum runtime.

For more information on replacement UPS batteries for your specific application, or to obtain a copy of our informative battery handbook, please visit Eaton.com/UPSbatteries.

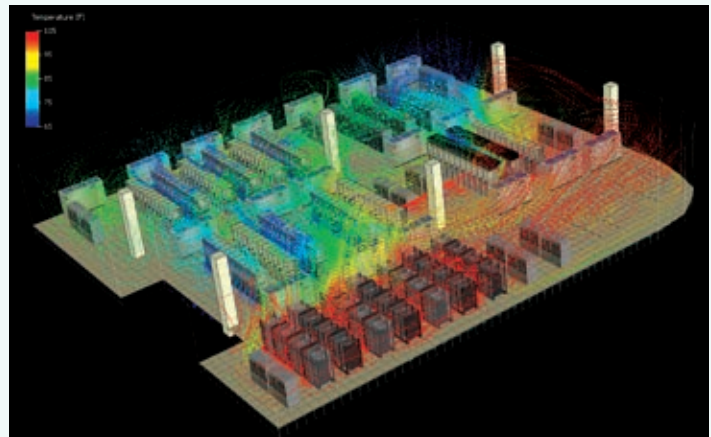
Computational Fluid Dynamics Modeling Services

Eaton's Computational Fluid Dynamics (CFD) Modeling Service provides a comprehensive approach to modeling the airflow, temperature, static pressure and energy profile of dynamic, critical environments. Using Future Facilities' 6SigmaDC software, we construct a virtual representation of your data center. This representation models the impact of load distribution within the facility, as well as the flow of hot and cold air within the space. It also illustrates how to increase rack densities and server installations without creating additional hot spots and airflow issues.

The service compares and substantiates which design decisions will maximize your data center flexibility, scalability and resilience. It enables you to explore the best possible options for IT and facility growth, create a calculated plan and avoid major capital commitments and costly design/implementation mistakes.

Data Center Cooling and Aisle Containment Integrity Services

Eaton also offers integrity testing and data center analysis to improve infrastructure performance. Our professional services group specializes in identifying airflow management issues and taking corrective actions as well as providing the information necessary to make cost-effective decisions.



Stream line plot showing temperature of air as it flows throughout the data center. Plots can be animated to illustrate direction of flow.



Eaton's Remote Monitoring Command Center is available 24x7 to monitor the health of your UPS.

PredictPulse™ remote monitoring

In a perfect world, you'd have eyes on your IT infrastructure and power management equipment constantly, making sure it's protecting critical power and running efficiently. That's not reality though. Your team—however big or small—has more to tend to than just the IT environment. That's where remote monitoring and management can make a difference. It means a second set of eyes is keeping tabs on your equipment 24 hours a day, 7 days a week and will notify you of any issues.

PredictPulse is a monitoring and management service that collects and analyzes data from connected power infrastructure devices, providing us with the insight needed to make recommendations and take action on your behalf. It's powered by CA Technologies, bringing together the best in hardware and software.

Once activated, managed devices send parametric data to Eaton's monitoring center every 15 minutes. We compare current and historical performance data against specified parameters to determine if anything is out of the ordinary. At the same time, the data appears on your PredictPulse dashboard and alarms in the mobile app. If something is amiss, we'll notify you of the alarm and how we recommend addressing it.

For you, this all means peace of mind, less time spent managing IT equipment, reduced risk, access to real-time status information and expedited repairs. You'll also receive a report each month summarizing the past 30 days of status, performance, alarms and upcoming service needs.

Visit Eaton.com/PredictPulse for details.



Contact our dedicated team

Whether you have multiple sites or multiple vendors, Eaton is your total solutions provider. We deliver unsurpassed expertise through our service solutions and stand behind every product with 24x7 support to ensure reliable power for the most demanding applications. Contact our crisis response team day or night, 365 days a year, to speak directly with our most experienced service consultants and technical support experts.

Customer Support Center

For three-phase UPS and battery services, DC services, and software services: 1-800-843-9433.

For single-phase UPSs and technical support: 1-800-356-5737.

For power distribution services and support: 877-ETN-CARE or 877-386-2273.

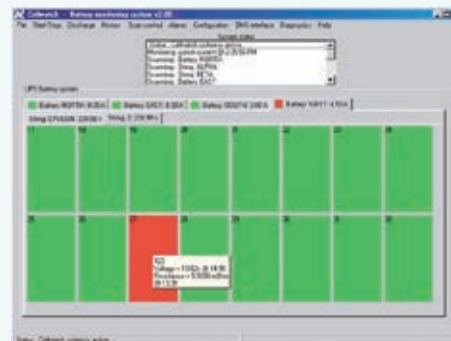


PredictPulse dashboard

Cellwatch software

Cellwatch software continuously monitors the three-phase UPS battery system, including string and cell level voltage, internal resistance, current and temperature throughout the charge, and discharge and float periods. It also provides immediate warnings of deterioration and imminent failure of batteries and identifies any individual battery that exhibits problems—providing a proactive approach to ensuring UPS reliability.

Visit Eaton.com/Cellwatch to learn more.



Cellwatch report

Industrial UPS



Eaton FERRUPS

Tower: 500–18000 VA

Rackmount: 850–7000 VA

Provides superior power protection with our patented ferroresonant technology

Typical applications:

- Telecommunications equipment
- Industrial process control equipment
- Midrange computing systems
- Data centers
- 911 centers



Features	FERRUPS Rackmount: 800-7000 VA Tower: 500-18000 VA
Form factor	Tower or rackmount
Sine wave output	•
Hot-swappable batteries	
Extended battery modules (optional)	•
Automatic bypass	
Serial or USB port	Serial
Start-on-battery	•
Audible alarms	•
Management software	•
Communication bay	
REPO or emergency power-off (EPO)	REPO
Power distribution module (optional)	
External maintenance bypass (optional)	•
TAA-compliant	•

CUSTOMER TESTIMONIAL

"When reliability is a very critical part of your business, the FERRUPS is great because its design really cleans up power."

- Douglas Schmidt, President, CEO Hardsoft Corporation

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Powering Business Worldwide