

PowerChain Management solutions

Power Quality  
and Distribution  
**Product and  
Service Catalog**  
March 2010

**EATON**

*Powering Business Worldwide*

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# Eaton overview



Eaton Corporation is a diversified power management company with global leadership in the electrical, fluid power, truck, automotive and aerospace industries. Our electrical product series and families—including Cutler-Hammer®, Holec®, MEM®, The Moeller Group, Phoenixtec Power Company Ltd., Powerware®, Santak, MGE Office Protection Systems, Bill, Elek and Pulizzi—encompass electrical control, power distribution, uninterruptible power systems (UPSs) and industrial automation products and services.

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 throughout its lifecycle.

PowerChain Management solutions provide the power to make a difference, helping our customers achieve their business goals while maintaining environmentally sustainable enterprises as well. Tools such as energy audits and real-time monitoring of energy consumption enable customers to manage energy resources wisely. Products such as Eaton's state-of-the-art UPSs help conserve energy and increase efficiency. Eaton is committed to sustainable solutions—for our customers and for ourselves.

Eaton solutions have been recognized by end-users and industry experts for delivering the highest customer value and satisfaction, as well as for demonstrating insight into customer needs, among all UPS vendors.\* Our solutions are also the global market share leader in medium- and large-range UPSs above 5 kVA; they are second-leading in small system UPSs at and below 5 kVA.\*\*

## Our story

Comprised of legacy brands including Powerware, MGE Office Protection Systems, Best Power, Pulizzi and Aphel, Eaton's power quality business is a global leader in power management products and services. Eaton has many products that provide

customer-driven PowerChain Management solutions to serve the power system needs of the industrial, institutional, government, utility, commercial, residential, IT, mission-critical and OEM markets worldwide.

## Our portfolio

Eaton's power quality portfolio encompasses a comprehensive offering of power management solutions from a single-source provider. This includes UPSs, surge protective devices, power distribution units (PDUs), remote monitoring, meters, software, connectivity, enclosures and services. Our power quality portfolio was designed to fulfill specific customer requirements, complement a new or pre-existing solution, and to deliver a comprehensive solution.

With all our products, Eaton strives for continued success in leveraging technical innovation to develop next-generation solutions.

[www.eaton.com/powerquality](http://www.eaton.com/powerquality)

## Our customers

For more than 40 years, Eaton has been safeguarding the critical systems of businesses across the globe. Whether protecting a single desktop or the most vast data center, 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, health care organizations, governmental agencies, manufacturing firms, broadcasting companies, financial institutions, and a wide variety of other applications.

[www.eaton.com/pqsuccess](http://www.eaton.com/pqsuccess)

# Eaton overview



## Powerware series UPSs

Powerware and Eaton series UPSs up to 1100 kVA are designed to deliver differentiated power quality solutions and a low total cost of ownership (TCO). Our 3- and 5-series UPSs offer a three-year warranty with product registration.

**3-year warranty with product registration!**

## Pulsar series UPSs

The Pulsar® series of products is designed to meet even the most cost-conscious customer's needs while providing a reliable and easy-to-set-up solution.

## UPSgrade

The new Eaton UPSgrade™ program is designed to offer affordable access to the industry's latest technology solutions at discounted prices. This program even provides free and environmentally sound disposal of old equipment.

# UPSgrade™

With over 130 SKUs to choose from, the UPSgrade program makes it simple to improve your UPS protection.

- Products up to 6 kVA are available (trade-ins up to 3 kVA)
- Upgrade must be to a greater kVA
- Upgrade may be up to twice the kVA of the original unit
- Upgrade must be equal or greater topology (standby, line-interactive and online technology available)

[www.eaton.com/upsgrade](http://www.eaton.com/upsgrade)

## Awards gallery

### 2008



#### Frost & Sullivan

2008 Global Power Distribution Unit Market Penetration Leadership Award  
[www.epdu.com](http://www.epdu.com)

2008 Best Practices Award  
North American Three Phase Uninterruptible Power Supply Product Innovation Award  
Eaton 9395 UPS

2008 Best Practices Award  
2008 European Uninterruptible Power Supplies Company of the Year



#### Network Products Guide 2008 Best Products & Services

Eaton Evolution UPS



#### Internet Telephony 2008 Product of the Year

Eaton 9130 UPS



#### Eaton 9130 UPS Wins 2008 Product of the Year Award from Unified Communication Magazine

Unified Communications magazine bestowed its Product of the Year Award on the Eaton 9130 UPS for its technological advancement and the ROI it provides customers.



#### 2008 Communications Solutions Product of the Year

Eaton 9130 UPS

## Demo units

Eaton invites you to try before you buy with the Eaton Technology Challenge program! Available for select UPS, ePDU® and Environmental Rack Monitor products, the program is simple and risk-free.

Simply contact your Eaton Authorized Reseller to place your evaluation order. Keep the equipment for up to 45 days from the date of shipment—it may then be purchased or simply returned to Eaton.

[www.eaton.com/techchallenge](http://www.eaton.com/techchallenge)

## Eaton PowerAdvantage Program

The Eaton PowerAdvantage Program offers Eaton resellers in the IT Channel a simple, yet rewarding experience for selling Eaton's power protection and management solutions. VAR partners can gain a competitive advantage by selling Eaton and joining the PowerAdvantage program, which offers benefits such as:

Eaton **POWERADVANTAGE**  
Partner Program

- Five percent up-front rebate on Eaton products and services through IT Distribution
- Deal registration offering another 4 percent discount

- Dedicated pre- and post-sales support
- Lead generation
- Marketing development funds

For more information on the PowerAdvantage Program, please visit [www.poweradvantage.eaton.com](http://www.poweradvantage.eaton.com) or contact a Channel Development Manager at 877-233-8519.

## TAA compliant UPSs now available!

Eaton is adding to our TAA compliant product portfolio. These *Assembled in the U.S.A.* UPSs are designed to be used in a wide range of public sector applications, allowing Eaton to better serve the government industry and its needs.

Please visit [www.eaton.com/taups](http://www.eaton.com/taups) to learn more about these products.



This icon indicates UPS models that are TAA compliant.

## 2009



### Ethisphere Institute

2009 World's Most Ethical Companies Award



### Fortune magazine names Eaton one of the world's Most Admired Companies

Eaton ranked number four in Fortune magazine's "Most Admired" industrial and farm equipment category, March 16, 2009 issue.



### Buildings Top 100 Products 2009

Eaton 9130 UPS



### Network Products Guide 2009 Product Innovation

Eaton 9130 UPS



### Internet Telephony 2009 Product of the Year

Eaton 5130 UPS



### Network Products Guide 2009 Product Innovation

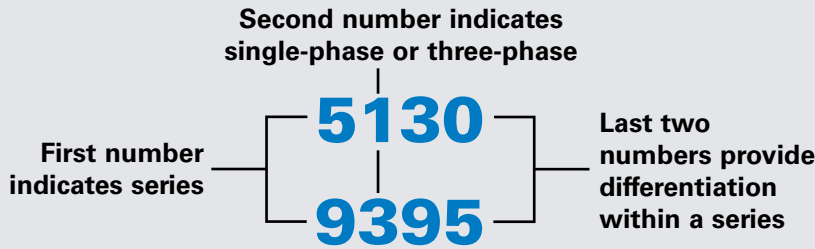
Eaton 9130 UPS

\* Frost & Sullivan Award for 2003 Customer Value and Satisfaction and Frost & Sullivan Award for 2004 Product Line Strategy.

\*\* Based on Frost & Sullivan 2004 World UPS Markets report data.

# UPS solution overview

We have a host of selection tools available on our Web site to help you select the right UPS—please visit us at [www.eaton.com/powerquality](http://www.eaton.com/powerquality).



## Selecting the right UPS

Eaton's power management solutions are based on protecting the nine most common power problems present in any environment. This unique approach makes your product selection decisions about power protection much simpler. The nine power problems listed below are potentially harmful to both your data and your hardware. Eaton Powerware Series of products offer three levels of power protection: Series 3, Series 5 and Series 9, plus the rugged FERRUPS® product line that provides protection from eight potential problems in harsh environments. Based on the parameters defined by your application, you can select a UPS from the level that best matches your power protection needs.



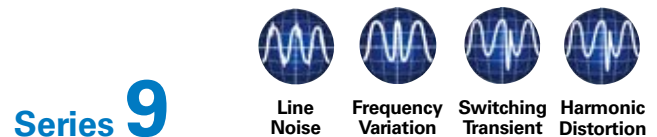
### Basic solution: Protection from three potential problems

The Series 3 UPS primarily protects against three of the nine power problems including power failures, power sags and power surges. This essential, cost-effective protection is necessary in order to prevent damage such as data loss, file corruption, flickering lights, hardware damage and equipment shutoff. For example, if the utility fails, you could lose all of your work-in-progress. The Series 3 UPS offers a degree of protection against the remaining power problems and is most commonly used to protect single workstations and point-of-sale (POS) equipment.



### Intermediate solution: Protection from five potential problems

Series 5 UPSs are most effective against five power problems (power failures, power sags, power surges, under-voltage and over-voltage) and offer a degree of protection against other power problems. Some of the damages you risk by not using a Series 5 UPS include premature hardware failure, data loss and corruption, data error, keyboard lockup, storage loss and system lockup. Series 5 UPSs are recommended for small network systems—all the way up to enterprise networking environments.



### Complete solution: Protection from all nine potential problems

Series 9 UPSs protect against all nine power problems: power failures, power sags, power surges, under-voltage, electrical line noise, over-voltage, frequency variation, switching transients and harmonic distortion. Series 9 comprehensive protection minimizes the opportunity for component stress, burned circuit boards, data crashes and program failures. Series 9 UPSs offer the highest level of power protection available and are always recommended for mission-critical applications like server farms, hospitals and Voice-over-Internet-Protocol (VoIP) applications.

# PC, workstation and home A/V UPS

Powerware series | Pulsar series

## Powerware series

### Eaton 3105

500–700 VA

Protects loads on eight outlets—four with surge suppression and battery backup, four with suppression only



3-year warranty with product registration!

#### Typical applications:

- Small office, home office
- POS systems
- PCs and peripherals
- Fax machines and telephone equipment



## Pulsar series

### Eaton 5110

500–1500 VA

Protects loads on eight outlets—four with surge suppression and battery backup, four with suppression only

#### Typical applications:

- Office workstations
- PBX or key phone systems
- Servers and network nodes
- POS systems
- Peripheral devices



3-year warranty with product registration!

### Eaton Nova AVR

600/1100 VA

Provides line-interactive backup and surge protection on three to four outlets and has a wide tolerance to power fluctuations

#### Typical applications:

- POS
- Small office, home office PCs
- Workstations



Features	3105 500–700 VA	Nova AVR® 600/1100 VA	5110 500–1500 VA
Form factor	Standalone or wall-mount	Tower	Tower, under computer terminal mounting or computer shelf mounting
Load segment control			
Hot-swappable batteries			
Start-on-battery	•	•	•
Audible alarms	•	•	•
Serial or USB port	USB	USB	USB
Management software	•	•	•
Network cards available			
Network transient protector	•	1100 VA model	•
Remote emergency power-off (REPO)			
Power distribution unit (optional)			
Extended battery modules (optional)			
Extended warranty (optional)		•	
Flex and PowerTrust on-site service plans (optional)		•	
Gold plans (optional)	•		•

# Network and server UPS

Powerware series | Tower models



## Eaton 5115

500–1400 VA

Delivers smooth, continuous power with pure sine wave output

### Typical applications:

- Workstations
- Small servers
- Hubs and routers
- Single and multiple PCs
- Small to medium business equipment



New TAA compliant models now available!

3-year warranty with product registration!



## Eaton 5125

1000–2200 VA

Delivers cost-effective power protection and flexibility

### Typical applications:

- Workstations
- Small servers
- Hubs and routers
- Single and multiple PCs
- Small to medium business equipment

3-year warranty with product registration!



## Eaton 5130

1000–3000 VA

Provides more real available power and flexibility with hot-swappable batteries and load segmentation—full-featured power protection in a small package at a value price

### Typical applications:

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



New TAA compliant models now available!

3-year warranty with product registration!



Features	5115 500–1400 VA	5125 1000–2200 VA	5130 1000–3000 VA
Form factor	Tower	Tower	Tower, 2U rackmount or 3U rackmount
ABM technology	•	•	
Load segment control		•	•
Hot-swappable batteries	•	•	•
Start-on-battery	•	•	•
Audible alarms	•	•	•
Serial or USB port	Serial & USB	Serial & USB	Serial & USB
LanSafe software	•	•	•
Network cards available		X-Slot®	Mini-Slot
Network transient protector	•	•	•
Remote emergency power-off (REPO)		•	•
Power distribution unit (optional)			•
Extended battery modules (optional)		•	•
Extended warranty (optional)			•
Flex and PowerTrust on-site service plans (optional)			•
Gold plans (optional)	•	•	



# Network and server UPS

Powerware series | Tower models, cont.



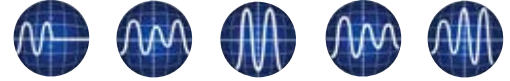
## Eaton 9130

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
- Remote IC locations
- Central IM location
- Mid-range telephone systems
- IP-based security systems
- VoIP systems
- Lab equipment



Power Failure    Power Sag    Power Surge    Under-voltage    Over-voltage



Line Noise    Frequency Variation    Switching Transient    Harmonic Distortion

## Eaton 9135

5000–6000 VA

Delivers up to 6000 VA in 40 percent less space than previous technologies, provides both hot-swappable batteries and power modules

### Typical applications:

- Small to medium business networks
- Remote IC locations
- Central IM location
- Mid-range telephone systems
- VoIP systems
- Lab equipment
- Centralized retail



## 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 VA 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



# Network and server UPS

Powerware series | Tower models, cont.

Features	9130 700–3000 VA	9135 5000–6000 VA	9155 8–15 kVA	9170+ 3–18 kVA
Form factor	Tower	Tower	Tower	Tower
ABM technology	•		•	•
Intuitive LCD interface	•	•	•	•
Hot-swappable batteries	•	•		•
Extended battery module (optional)	•	3U	•	•
Load segment control	•			
Network transient protector	•			
Serial or USB port	Serial & USB	Serial, USB and DB-9	Serial	Serial
Start-on-battery	•	•	•	
Audible alarms	•	•	•	•
LanSafe software	•	•	•	•
Communication bay	Mini-Slot & BestDock	Mini-Slot	•	BestDock
REPO or emergency power-off (EPO)	REPO	REPO	REPO	REPO
Power distribution module (optional) <sup>1</sup>	•	3U	•	
External maintenance bypass (optional)	•	•	•	•
Extended warranty (optional)	•	•		
Flex and PowerTrust on-site service plans (optional)	•	•		
Gold plans (optional)			•	•

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

## Feature focus

Eaton offers an extensive and innovative line of UPS solutions in Series 3, 5 and 9 with power ranges from 500 VA to 18 kVA. With industry-leading power protection in optimized form factors, Eaton offers a solution that fits your application. Here are just a few features that enable us to provide you with the best power protection available.

### Power density—don't let power management take over your rack

Eaton developed high-density rackmount UPSs to provide optimal, reliable power protection for critical loads—delivering more performance in smaller packages. We offer the highest power density by VA rating with sizes from 0U to 5U. Our space-saving models free up valuable rack space for other essential equipment.



### Communication—monitor your UPS via an Ethernet network or the Internet

All of our UPSs include a USB or serial port that allows you to communicate with the UPS, and most have a communications bay or card installed for increased power protection and control. Our variety of connectivity products ensure compatibility with a range of external devices via the Web, serial, USB, relays, Modbus or SNMP. Some cards allow you to connect your UPS directly to the Ethernet network and the Internet, allowing you to monitor and manage your UPS conveniently with a standard Web browser.

### Energy efficiency—use less energy, save more money

As power density in modern data centers increases, more focus has been placed on improving efficiency in the power distribution infrastructure. We offer practical and affordable options to significantly improve efficiency without making major changes to your existing power delivery infrastructure. Our advancements in UPSs and power distribution products can reduce energy, cabling and cooling costs for your data center.

### Investment protection—our products are backed by a full range of service options and dedicated support teams so you are always protected

Eaton stands behind our outstanding network and server UPS products with a standard two-year factory warranty with the option to purchase up to three years of extended coverage. For additional protection, select a service plan from basic advanced exchange to on-site startup and preventive maintenance performed by certified customer service engineers. All network and server UPSs also include a load protection guarantee.

# Network and server UPS

Pulsar series | Tower models, cont.

## Eaton Evolution

650–2000 VA

High-density power protection with separately controlled receptacles for load shedding



### Typical applications:

- Network devices
- Tower servers
- Network storage systems
- Network devices

## Eaton Evolution S

1250–3000 VA

High-density power protection with optimized form factors and extended runtime options



### Typical applications:

- Network devices
- Tower servers
- Network storage systems

## Eaton EX

700–3000 VA

Modular, online UPS with automatic bypass for fault-tolerance



### Typical applications:

- Servers, data storage and network equipment
- Medical equipment
- Telephony—VoIP
- Industrial processes

## Eaton MX

5 kVA

A unique, online product family designed to let you pay as you grow with high density power protection



### Typical applications:

- High-density servers
- Blade servers
- High-density networking switches
- Network storage systems
- Health/medical equipment

Features	Evolution®	Evolution S	EX	MX
Form factor	Tower	Tower	Tower	Tower
ABM technology				
Load segment control	•	•	•	
Hot-swappable batteries	•	•	•	•
Start-on-battery	•	•	•	
Audible alarms	•	•	•	•
Serial or USB port	Serial & USB	Serial & USB	Serial & USB	Serial & USB
Management software	•	•	•	•
Communication bay	NMC Mini-Slot	NMC Mini-Slot	NMC Mini-Slot	NMC Mini-Slot
Network transient protector				
REPO or emergency power-off (EPO)	REPO	REPO	REPO	REPO
Power distribution unit (optional)	•	•	•	
Extended battery modules (optional)	•	•	•	•
External maintenance bypass (optional)	•	•	•	•
Extended warranty (optional)	•	•	•	•
Flex and PowerTrust on-site service plans (optional)	•	•	•	•

# Network and server UPS

Powerware series | Rackmount models

## Eaton 5115

500–1500 VA

Provides high-density, advanced power protection

### Typical applications:

- Low profile rack servers
- Routers and hubs
- Wall-mount telecom key systems
- Rack or wall-mount VoIP
- Servers and storage systems



3-year warranty with product registration!

## Eaton 5125

5000–6000 VA

Provides high-density, superior power protection

### Typical applications:

- PC and workstation clusters
- Enterprise networking systems
- Server farms
- Data center and RAID systems
- Rack servers and other rack equipment



3-year warranty with product registration!

## Eaton 5130

1000–3000 VA

Provides more real available power and flexibility with hot-swappable batteries and load segmentation—full-featured power protection in a small package at a value price

### Typical applications:

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



3-year warranty with product registration!



New TAA compliant models now available!

## Eaton 9135

5000–6000 VA

Delivers up to 6000 VA in 40 percent less space than previous technologies, provides both hot-swappable batteries and power modules

### Typical applications:

- Small to medium business networks
- Remote IC locations
- Central IM location
- Mid-range telephone systems
- VoIP systems
- Lab equipment
- Centralized retail



## 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
- Remote IC locations
- Central IM location
- Mid-range telephone systems
- IP-based security systems
- VoIP systems
- Lab equipment



## Eaton 9140

7.5–10 kVA

Superior de-centralized power protection for medium and high density rack environments

### Typical applications:

- Medium and high-density rack environments
- Server farms, especially blade servers
- LAN gateways
- Clustered PCs
- Enterprise telecommunications and engineering systems



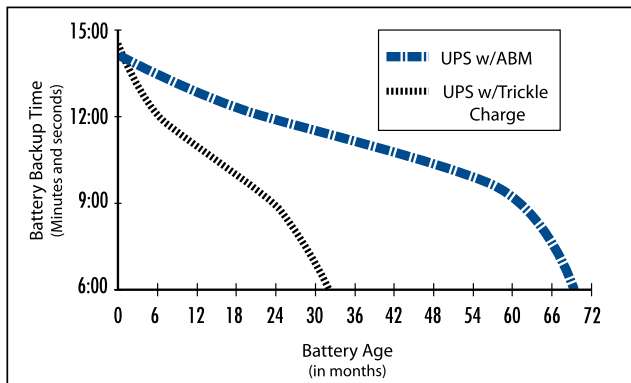
# Network and server UPS

Powerware series | Rackmount models, cont.

Features	5115 500–1500 VA	5125 5000–6000 VA	5130 1000–3000 VA	9130 700–3000 VA	9135 5000–6000 VA	9140 7.5–10 kVA
Form factor	0U or 1U rackmount, wall-mount or bench-top	3U rackmount	Tower, 2U rackmount or 3U rackmount	2U rackmount	3U rackmount	6U rackmount
ABM technology	•	•		•		•
Intuitive LCD interface				•	•	•
Load segment control	•	•	•	•		
Hot-swappable batteries	•	•	•	•	•	•
Start-on-battery	•	•	•	•	•	•
Audible alarms	•	•	•	•	•	•
Serial or USB port	Serial & USB	Serial & USB	Serial & USB	Serial & USB	Serial & USB	Serial & USB
LanSafe software	•	•	•	•	•	•
Communication bay	X-Slot	X-Slot	Mini-Slot	Mini-Slot & BestDock	Mini-Slot	•
Network cards available	•	•				
Network transient protector	•		•	•		
Remote emergency power-off (REPO)		•	•	REPO	REPO	REPO
Power distribution unit (optional)			•	•	3U	•
Extended battery modules (optional)		•	•			
Extended warranty (optional)	•	•	•	•	•	
Flex and PowerTrust on-site service plans (optional)			•	•	•	
Gold plans (optional)	•	•				•

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

Most UPS manufacturers offer constant trickle-charge on their batteries, which degrades the batteries and reduces battery 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 the 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 run-times—increase the backup time of your UPS

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



## 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, thereby 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**.

# Network and server UPS

Pulsar series | **Rackmount models, cont.**

## Eaton Evolution

**650–2000 VA**

High-density power protection with separately controlled receptacles for load shedding

**Typical applications:**

- Network devices
- Rackmounted or tower servers
- Network storage systems
- Network devices
- Rackmounted or tower servers
- Network storage systems



## Eaton Evolution S

**1250–3000 VA**

High-density power protection with optimized form factors and extended runtime options

**Typical applications:**

- Network devices
- Rackmounted or tower servers
- Network storage systems



## Eaton EX

**700–3000 VA**

Modular, online UPS with automatic bypass for fault-tolerance

**Typical applications:**

- Servers, data storage and network equipment
- Medical equipment
- Telephony—VoIP
- Industrial processes



## Eaton MX

**5 kVA**

A unique, online product family designed to let you pay as you grow with high density power protection

**Typical applications:**

- High-density servers
- Blade servers
- High-density networking switches
- Network storage systems
- Health/Medical equipment



## Eaton MX Frame

**5–20 kVA**

A truly scalable optimized rack solution that allows you to add power as your business grows

**Typical applications:**

- High-density servers
- Blade servers
- High-density networking switches
- Network storage systems
- Health/Medical equipment



Features	Evolution	Evolution S	EX	MX
Form factor	1U/2U Rackmount	Rackmount	Rackmount	3U Rackmount
ABM technology				
Load segment control	•	•	•	
Hot-swappable batteries	•	•	•	•
Start-on-battery	•	•	•	
Audible alarms	•	•	•	•
Serial or USB port	Serial & USB	Serial & USB	Serial & USB	Serial & USB
Management software	•	•	•	•
Communication bay	NMC Mini-Slot	NMC Mini-Slot	NMC Mini-Slot	NMC Mini-Slot
Network transient protector				
REPO or emergency power-off (EPO)	REPO	REPO	REPO	REPO
Power distribution unit (optional)	•	•	•	
Extended battery modules (optional)	•	•	•	•
External maintenance bypass (optional)	•	•	•	•
Extended warranty (optional)	•	•	•	•
Flex and PowerTrust on-site service plans (optional)	•	•	•	•

# Network and server UPS

## Eaton BladeUPS



### Eaton BladeUPS

12–60 kW

The revolutionary Eaton BladeUPS® power quality system expands power protection from 12 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.

#### Features and benefits

- Achieves the highest power density in the marketplace with a 6U rack height per module
- Reduces operating expenses with flexible, compact configuration options
- 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
- Increases system availability by not requiring any external controllers for paralleling
- Features hot-swappable battery modules and electronics
- Uses off-the-shelf options, including line cord kits, X-Slot cards, EBMs, racks, sub-distribution and rack power strips
- Input configurations using industry-standard plugs, for easy deployment

#### Typical applications

- Blade server support
- Small, medium and large data centers
- Network closets
- VoIP equipment
- Networking applications: IPTV, security
- Storage area networks and RAID



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



### Eaton BladeUPS Maintenance Bypass Module (MBM)

The Eaton MBM is a fully featured maintenance bypass designed to transfer power from a fully populated 60 kW N+1 BladeUPS system into bypass. This allows maintenance and service to be performed on a de-energized BladeUPS cabinet without affecting power to the critical load. The 6U housing features front panels designed to mimic the look of BladeUPS EBM extended battery modules and is designed to fit seamlessly into your data center environment.



An Eaton Green Solution



#### New BladeUPS firmware 2.02 now available!

The new BladeUPS firmware version 2.02 improves efficiency of BladeUPS units to over 98% in normal operation. The upgrade is highly recommended for all 208V and 400V BladeUPS models and is required when adding new BladeUPS modules to expand existing parallel systems.

# Data center and facility UPS

## Data center and facility UPS overview

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

The following features differentiate Eaton's data center and facility UPS solutions:

### 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 system (NMS) for system monitoring data gathering, and extended battery backup time often leads 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 customers choose a custom Eaton solution, they come to the Customer Witness Test Centers in Raleigh, NC, and Helsinki, Finland, to see their system put through its paces, giving them hands-on experience with the system that will be in their facility and confidence that the system will operate efficiently and trouble-free from day one.

The Eaton Customer Witness Test Center tests power modules, including UPS, PDU, switchgear, static transfer switches and battery cabinets. It also tests 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.



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



# Data center and facility UPS

## Feature focus

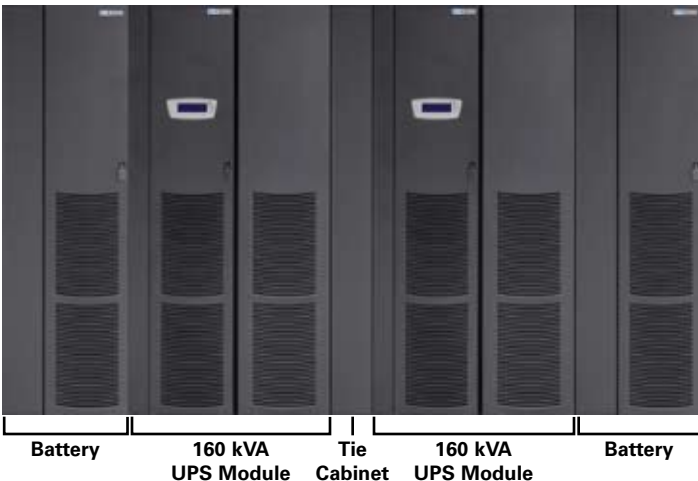
Eaton three-phase UPS products are packed with features and available options to integrate easily with a wide array of site requirements. Industry leading technologies and performance allow consultants and contractors to exceed customer expectations and deliver more value.

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, all the while reducing energy costs and putting money back into the budget. In addition, site designs using 400V can capture savings both in equipment costs and operating costs that can dramatically improve end-to-end efficiencies within facilities.

## Powerware Hot Sync wireless paralleling technology

Using our signature Powerware Hot Sync technology, multiple UPS modules can be paralleled for extra capacity or redundancy. A 15 kVA 9355, for example, can grow to support loads of up to 45 kVA. There's no dependence on communications wiring among these modules, enhancing reliability and simplifying installation. This paralleling capability is far more elegantly and reliably implemented with the 9355, 9390 and 9395 than with competitive products.

This two-module 9390 system shown below can be configured as 160 kVA N+1 redundant (320 kVA capacity with 36-inch tie cabinet). The width of this configuration is a compact 164.6 inches.



## Smallest footprint and weight

The 9390 offers the smallest footprint of any UPS in its class—35 to 50 percent smaller than competitive units. Cabling can enter the UPS from either the top or bottom of the cabinet to provide easier, more flexible installation. The 9390 provides front panel access for all services and operation, increasing serviceability and reducing mean time to repair (MTTR). And since the compact 9390 cabinet can be installed against back and side walls, you have more location options, installation is fast and easy, deployment cost is lower, and you save valuable data center space.

### Big power, small footprint

#### Eaton 9390

Weight = 580 pounds  
18.9 x 31.6 in.

#### Competition's

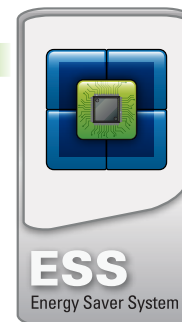
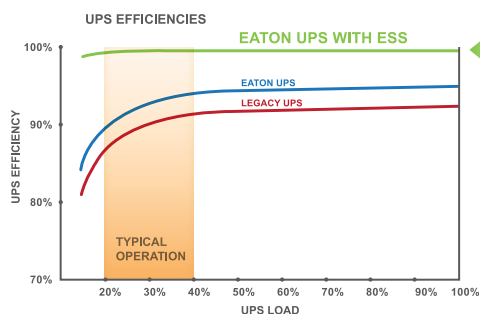
Weight = 2700 pounds  
32.5 in. x 34.9 in.



Data center and facility UPS

## 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 over 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 [www.eaton.com/ESS](http://www.eaton.com/ESS).



# Data center and facility UPS

Powerware series



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.



## Eaton 9395 225–1100 kVA

Our latest three-phase UPS innovation, the 9395 provides a high-end power quality solution for the largest data centers, mainframes, supercomputing equipment, large office buildings and applications requiring large, multi-module protection.



An Eaton Green Solution



## 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, co-location facilities, hotels, casinos and even marine applications.



## Eaton 9390IT 40 kVA

The 9390IT combines flexibility, scalability and power density in a sleek, end-of-row tower design. With standard internal batteries, and modular 40 kVA building block scalability, coupled with integrated onboard pre-wired maintenance bypass, the 9390IT offers the smallest footprint of any comparable UPS.



### Plant Engineering

2007 Electrical  
Power Product of the Year



### Frost & Sullivan

2008 Best Practices Award  
North American Three Phase Uninterruptible  
Power Supply Product Innovation Award



### SearchDataCenter.com

2009 Silver Product of the Year Award

Data center and facility UPS  
Powerware series

# Power distribution and racks

## Floor-based models



### 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. This customizable cabinet features a 10-inch color LCD screen for display status for up to eight uninterruptable 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 that 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. Eaton's 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 and racks  
Floor-based models

### 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.



### 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.



### 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 that 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.



# Power distribution and racks

## Rackmount models



### Enclosures

Eaton enclosure solutions address the first critical step in planning an ideal data center and encompass a wide range of cabinets and racks for network, telecom and server applications.

#### Features and benefits

- Highly functional and stylish, value packed and competitively priced
- Perforated doors exceed server airflow requirements
- Split rear doors minimized floor space requirements and provide ease of installation and maintenance
- Floating 19-inch rails provide more room for 0U cable management and PDU installations
- Z-server rails offer additional mounting locations for ePDUs and cable management
- Internal, welded frame with repetitive hold pattern delivers high load bearing capacity and additional mounting locations
- Internal door hinges offer a high level of cabinet security
- Door stiffeners offer mounting locations for fan trays
- Tool-free accessories facilitate installation and reduce installation time and costs

### Rack Power Module (RPM)

The RPM provides plug-and-power 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.



#### Features and benefits

- 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
- Provides 15 different receptacle plate options to meet specific applications



### 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 0U base unit can be placed horizontally or vertically in unused space. The temperature/humidity sensor units can be placed anywhere in the enclosure.

#### Features and benefits

- 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 e-mail, SNMP, PDA or pager
- Simplifies operations with an intuitive, Web browser interface, rich graphing of data, auto-discovery and auto-aggregation utilities and more

#### Typical applications

- Data centers
- Warehouses and distribution centers
- Unmanned equipment centers
- Libraries and museums
- Laboratories and hospitals

# Power distribution and racks

## Rackmount models, cont.

### Eaton ePDUs

Eaton offers the largest selection of enclosure power distribution units available on the market. This complete suite of power products is designed specifically for data center IT environments and they provide manageability and customizable enclosure control.

Distributing 1.4 kW to 15+ kW levels of power and offering seven levels of functionality, Eaton ePDUs satisfy the demand of every data center. Please visit [www.epdu.com](http://www.epdu.com) for complete information.



### ePDU Power

#### Standard Power (0-4 kW)

Up to six 1U/2U servers or peripherals, such as network switches, environmental monitors, KVM devices and rack accessories

#### Mid-range Power (4-10 kW)

Up to 16 1U/2U servers or two blade server chassis, offering both IEC-320 and NEMA receptacles

#### High Power (10-15 kW)

Up to 25 1U/2U servers or three blade server chassis, offering up to 45 receptacles in multiple form factors

#### Ultra High Power (15+ kW)

For racks with up to four blade server chassis and other power-hungry pieces of IT equipment

### ePDU functionality

#### Basic

Economical power distribution to up to 24 receptacles in a rack or wiring closet

#### Monitored

Power distribution with secure, remote monitoring and alerts over IP networks

#### Advanced Monitored

Provides maximum power for both standard and blade servers. Employing multiple configurations, the Easy-Read digital ammeter and remote power management with clearly labeled circuits, the ePDU assures easy management and monitoring for current requirements and future expansion

#### Switched

Provides secure, network receptacle-level control and network monitoring; optional integrated environmental and inter-networking capabilities

#### Emergency Power Off

These products are frequently used in test and measurement applications. A full range of products from basic North American models to three-phase international units are available.

#### eATS

The enclosure automatic transfer switch (eATS) provides in-rack power distribution with redundant power sourcing for single-corded loads

### New Value Line!

Eaton's ePDU Value line is designed to provide the highest reliability and quality for the most critical power loads. Built to be light weight and easy to mount, these power distribution units are cost effective solutions to meet all business needs.

### ePDU cables

All Eaton power cables are tested and certified for use with Eaton products, such as ePDUs, rack power modules (RPMs) and UPSs—proven to deliver the reliability and service life needed for the most rigorous data center applications.

Eaton offers adapters, jumpers and splitters that are customized for your ePDU.

- Select from a broad range of input/output connectors.
- Streamline cabling in enclosures by deploying exactly the cable length needed.
- Count on assured performance with pre-tested products that meet UL and Eaton standards.



# 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



TAA compliant models now available!

## Eaton EX RT UPS

**500–11000 VA**

Designed for sensitive high-density server environments and harsh industrial applications

### Typical applications:

- Web/e-mail servers and application servers
- Convergence IP-based technology (VoIP, VPN, firewall)
- Telecom equipment
- Sensitive electronic equipment in industrial applications
- Networking equipment (hubs, switches, routers)
- Network storage systems
- Health/medical equipment



Features	FERRUPS Rackmount: 800–7000 VA Tower: 500–18000 VA	EX RT 500–11000 VA
Form factor	Tower or rackmount	Tower or rackmount
Intuitive LCD interface		•
Hot-swappable batteries		•
Extended battery module (optional)	•	Automatic bypass
Load segment control		•
Serial or USB port	Serial	Serial & DB-9
Start-on-battery	•	
Audible alarms	•	
Management software	•	•
Communication bay		NMC Mini-Slot
REPO or emergency power-off (EPO)	REPO	REPO
Power distribution module (optional)		•
External maintenance bypass (optional)	•	•
Extended warranty (optional)		•
Flex and PowerTrust on-site service plans (optional)		•
Gold plans (optional)	•	

# Surge suppression

## Eaton Surge Protective Devices

Eaton's SPD series surge protective devices are the latest and most advanced UL 1449 3rd Edition certified surge protectors. Application of SPD Series units throughout a facility will ensure that equipment is protected with the safest and most reliable surge protective devices available. SPD Series units are available in all common voltages and configurations and also in a variety of surge current capacity ratings from 50 through 400 kA. Three feature package options are also available to choose from. The breadth of the SPD Series' features, options and configurations ensures that the correct unit is available for all electrical applications.

### Features and benefits

- Utilizes thermally protected metal oxide varistor (MOV) technology
- 20 kA nominal discharge current (In) rating (maximum rating assigned by UL)
- 50 through 400 kA surge current capacity ratings
- Three feature package options
- 200 kA short circuit current rating (SCCR)
- 10-year warranty



## Eaton Eclipse

The Eaton Eclipse product line brings affordable surge protection to your consumer electronics, PCs, printers and home theater equipment in the event of nearby lightning strikes, surges and spikes. In addition, Eclipse provides line noise reduction to minimize interference from the utility power. All Eclipse models include a load protected status LED to notify you in case of surge protection failure.

Eclipse is available in three models for individual applications:

- **Eclipse Personal** for home appliance or home/office PC use
- **Eclipse Pro** for professional use, including networked PCs, servers and business equipment
- **Eclipse ProTel** provides a fax/modem protector in addition to all the features of Eclipse Pro



# DC power solutions

Eaton provides a full range of DC power solutions designed to meet the challenges different customer applications demand, including all levels of telecommunications networks, data center and private enterprise/IT environments.

Eaton's 24V and -48V DC systems deliver inherent reliability, superior flexibility, power density and efficiency; also, the systems provide on-board intelligence for quick and easy setup, system monitoring and control to suit any requirements.

## DC power solutions for data centers

The DC power solutions' advantages—ultra-reliability and high efficiency and flexibility—have made the products increasingly popular solutions for data centers.

**High reliability**—A direct link between the battery and the load results in no dependence on moving parts (e.g. switches) or risk of delays. Additionally, the modular rectifier design avoids need for maintenance bypass protection.

**High efficiency**—Eaton's core DC power solutions offer the high efficiency of single-conversion architecture that means greater end-to-end system operating efficiency with less cooling requirement.

**Maximum flexibility**—Highly scalable solutions offer a wide range of options for distribution, mounting, communications and control. Installation and commissioning is made easy with the built-in intelligence of our system controller with automatic set-up and default or factory customized programmable settings.



## DC power solutions for enterprise IT networks

These DC power solutions are compact; efficient; highly and easily scalable; safe and maintenance free—perfect for powering any business network application, such as server rooms, PABX, PoE and VoIP/IP PBX. System output power ranges from 900–4,500W in a single system, with high maximum operating efficiency of greater than 96%.



## DC power solutions for access telecom networks

Our compact, powerful, efficient and secure power solutions range from 900–2,000W for space-limited applications, like outdoor telecom enclosures or as add-on power for data center and enterprise IT networks. These systems are compatible with Eaton's Energy Saver Rectifier with operating efficiency of greater than 96%.



## DC power solutions for core telecom networks

Protect core telecom networks with high-capacity, reliable solutions that offer secure DC power up to 750 kW for central exchange and large data center environments.

### Smarter energy Eaton DC rectifiers

These telecom-grade 24 Vdc and -48 Vdc single- and three-phase rectifiers deliver inherent system modularity and reliability with high power density and high efficiency through offerings such as the Eaton Energy Saver Rectifier, which exceeds 96% operating efficiency.

### Smarter energy DC system controllers

DC system controllers provide intelligent monitoring and control designed to make everything easy, from system setup to asset (e.g. battery) protection and efficiency of operation. Advanced algorithms provide configurable, automated control and monitoring. A comprehensive array of communications options is also available.



DC power solutions



# Power management

## Software products

Eaton's software products deliver the ability to manage all your power devices over your network or the Web, from one or more PCs. With both supervisory and protection capability, our software allows you to monitor your power devices and even gracefully shut them down in the event of an extended power outage.

### Eaton Software Suite

Arriving bundled with every Powerware series UPS or BladeUPS, the Software Suite CD incorporates user-friendly features including our Software Wizard to guide you through software selection and installation. The Software Suite includes Intelligent Power<sup>®</sup> Manager supervisory software, NetWatch protection software, LanSafe, Multiview and Extensions for IBM Director.



### Intelligent Power Manager supervisory software

Ideal for monitoring and managing multiple power and environmental devices, Intelligent Power Manager software from Eaton delivers a global view across the network from any PC with an Internet browser. Exceptionally versatile, the software is compatible with devices supporting a network interface, including other manufacturers' UPSs, environmental sensors, ePDUs, shutdown applications and more. Intelligent Power Manager also offers the ability to centralize alarms, sort units by customized views and maintain event logs for preventive maintenance of the entire installed equipment base.

#### Features and benefits

- Monitor and manage multiple power devices
- See similar devices and all alerts from a single Web interface with customized views
- View network power from the same console as you manage the virtualized network, increasing efficiency
- Mass upgrade firmware for network management cards
- Automatically detect devices on the network with auto discovery
- Centralize alarms and maintain event logs; send events and alarms to select virtualization management consoles for immediate notification
- Track moves, adds and changes



### NetWatch protection software

The NetWatch Client software acts as a network-monitoring tool through a ConnectUPS card. During an extended power outage, the ConnectUPS card informs all registered NetWatch clients that it is time to shut down their respective operating systems. Up to 255 NetWatch clients can be registered to and controlled by a ConnectUPS card.



**Eaton NetWatch Client 5.0 has tested compatible with Cisco Unified Communications Manager 4.3. Go to [www.eaton.com/PQ/cisco](http://www.eaton.com/PQ/cisco) for disclaimer.**

### Eaton LanSafe software

LanSafe software delivers comprehensive support including graceful, remote shutdown of UPSs and network monitoring tools via serial, USB and network connectivity options.



#### Features and benefits

- Helps you determine how much money is saved from prevented downtime with a cost savings calculator
- Runs in the background without visual traces using our exclusive Stealth Mode Operation
- Eliminates the guesswork from UPS metering and status information with 3-D PowerScope and ControlRoom views
- Compiles UPS events and provides around-the-clock visual representation of the system event log in a calendar format

### Solution-Pac software suite

Our Pulsar series UPSs come with a Solution-Pac CD. This suite includes power management software for network-based shutdown as well as Intelligent Power Manager software for comprehensive management of multiple UPSs and PDUs.

# Power management

## Connectivity products

### 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.



#### 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.



#### 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. The card is available in two models: the X-Slot version and BestDock version.



#### 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.



# Power management

## Power Xpert Architecture

### Manage power as a strategic asset

Today, the IT infrastructure is viewed—and managed—as a strategic business asset. Clearly, the quality of the electrical power that flows through facilities, data centers and server rooms should be a factor when IT managers measure infrastructure performance. Yet, invisible and fleeting power disturbances can be silent killers—often going unmonitored and unnoticed.

With Eaton's Power Xpert® Architecture—the backbone of our PowerChain Management solutions—you gain unprecedented visibility into the entire power system. A framework to view your entire power system, Power Xpert Architecture encompasses conditioned power in the data center as well as unconditioned power coming into the facility.

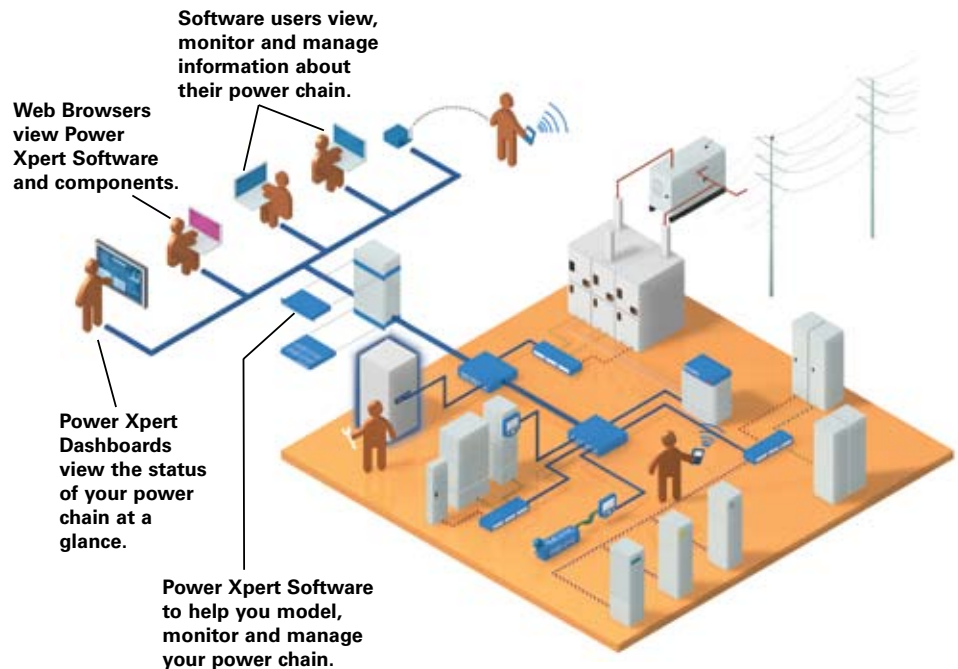
Through hardware, software and communication elements, the architecture unites diverse power components across your enterprise into a single view—old and new PDUs, batteries and other critical equipment from multiple manufacturers. So you can monitor and manage the power system more effectively and efficiently as you correlate events across the power system, drill into details for quick diagnosis and use tools to determine appropriate actions.

### A simple, Web-based interface helps you to:

- Understand energy usage patterns and baselines
- Reduce peak loads, identify high energy users and realize energy savings
- Find the real causes of issues, including power event “ghosts,” sags, swells and transients
- Analyze event severity according to IT standards
- See your power quality at a glance

Leverage Power Xpert Architecture to establish a unified management approach for your enterprise. The solution is based on open standards so that devices can communicate. It synchronizes equipment clocks through a network time server so you can accurately correlate events at different points in the system.

Power Xpert Architecture—it's one of Eaton's powerful innovations in facility monitoring and management. For additional information about Power Xpert Architecture and to download the product data sheets, visit [www.eaton.com/powerxpert](http://www.eaton.com/powerxpert).



# Power management

## Power Xpert Software and Foreseer

### Power Xpert Software

Power Xpert Software enables you to manage the complexities of large system deployments, from one desktop, on one screen. Web-enabled hardware devices are fine in limited numbers. However, as the number of components grows or becomes more complex, Power Xpert Software is the logical choice for the trending, analysis and alarming systems that are required.

Power Xpert Software is Web-enabled, open and time synchronized. Using only a browser, you can access the software from anywhere your network can reach, including remotely. Designed to communicate graphically with the broad range of Eaton and non-Eaton devices, Power Xpert Software uses industry standard protocols. The software is offered in two editions, the Professional edition and the Enterprise edition.

### Power Xpert Software Professional Edition

- Geared towards end users, with built in support for Eaton power distribution products such as switchgear, UPSs, breakers, PDUs, RPPs, meters, relays, VFDs and MCCs among others
- Eaton products connect with the software directly via an Ethernet connection, while legacy devices use a Power Xpert Gateway to Web-enable their communications
- A subset of third-party meters and devices are supported as standard via the gateway connection

### Power Xpert Software Enterprise Edition

- Geared towards advanced power users, system integrators and enterprises with heterogeneous device spectrum and system developers who can take advantage of the included SNMP and Modbus integration development utilities
- Extensive support for third-party devices via standard SNMP and Modbus TCP protocols
- Large variety of ready made third-party drop in drivers

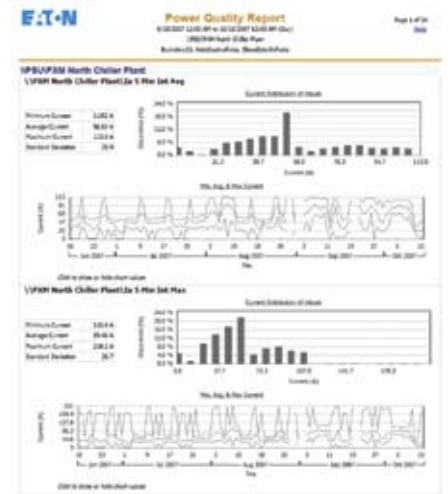


### Power Xpert Reporting

Standard reports include: Energy Summary Report, Energy Cost Allocation Report, Power Quality Report, Branch Circuit Report, Capacity Summary Report, Event Summary Report, Joint Commission (JCAHO) Report.

#### Highlighted features

- Helps quality for LEED credits
- Reporting hierarchies organize device data
- Microsoft Excel integration for further analysis
- Web browser access
- Connect to multiple databases simultaneously



### Foreseer Software

Foreseer™ is the solution for a mission-critical infrastructure, providing enterprise-wide monitoring and proactive management. With a vast selection of existing device interfaces (and customizability for almost any type of communicating equipment), Foreseer allows you to tailor your complete monitoring solution. The distributed, scalable architecture is tailored to your organizational needs, whether it is an individual site with thousands of data inputs or a distributed global enterprise with hundreds of remote locations.

Foreseer's unparalleled data handling engine allows it to sample an unprecedented number of data points from thousands of devices. The proactive data gathering algorithm means data is continuously collected 24 hours a day, 365 days a year. Unlike other systems where only certain data is stored, or noticed only after an event occurs, the aggressive monitoring engine gathers all data for dependable trend analysis and performance reporting. The data is also archived safely offsite for fast and seamless retrieval.



# Power management

## Power Xpert Meter 4000/6000/8000 series

Eaton's Power Xpert Meter 4000/6000/8000 series represent 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.

### Features and benefits

- Comprehensive power and power quality measurements for 138 standard data points logged
- Embedded Web server—see and analyze waveforms, trends and harmonics directly in your Web browser/meter display
- High speed 6 MHz impulsive transient detection and waveform capture
- Up to 1 millisecond time synchronization and event logging capability
- Open protocol support: HTTP, Modbus TCP, Modbus RTU, SNMP, NTP, FTP and COMTRADE

### Identify power quality problems

- Identify harmonics, sags, swells and transients
- Maximize IT equipment's service life
- Analyze sequence of events up to 1 millisecond time resolution
- Protect motors from damage
- Preserve the integrity of processes and batches
- Prevent blown capacitor bank fuses
- Protect transformers and conductors from overheating

## Power Xpert Meter 2000 series

### Compact Power Quality Metering products

The meters combine state-of-the-art technology with waveform viewing, 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

### Metering products

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.



### Features

- Comprehensive metering
- High-end accuracy
- Self-test capability to validate accuracy
- Large, easy-to-read display
- Local or remote configuration
- Industry-standard communication protocols (Modbus)
- Mix-and-match input/output options
- Integration with Eaton's Power Xpert Architecture
- Field-upgradeable

## IQ 100 series

### Metering products

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

## Power Xpert Gateway series cards

The Power Xpert Gateway series cards provide Web-enabled, real-time monitoring of UPSs, PDUs and RPPs through standard onboard Web pages, Power Xpert Software or third-party software. As an integral part of the Power Xpert Architecture, the cards provide a central point to connect UPSs, PDUs and RPPs to an Ethernet network via an X-Slot communication bay.



### Features and benefits

- View data from any location via Web-enabled monitoring of power quality data
- Generate accurate logs for power quality analysis via time-stamped data and event logging
- Integrate with standard BMSs and NMSs via the card's open communication protocols
- Allow for quick corrective action with customized e-mail messaging for events notification, including data and event logs
- Access improved overall facility monitoring via seamless integration of equipment into Power Xpert Software
- Supports Eaton Energy Management System (EMS) for power distribution products, including remote configuration and editing capability

# Service and support solutions

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 over 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 (QOS) at 95 percent or higher since 1999 (based on returned surveys from clients who used services). Over 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 its field technicians—requiring each new technician to complete 24 weeks of training before becoming certified and being placed in the field. To minimize MTTR, Eaton provides the latest technologies in scheduling, call management, parts optimization and remote diagnostics.



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

## 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.

Eaton offers an extensive range of service options for single-phase, three-phase and DC power, software and multi-vendor products. Let us help you select an onsite or depot repair service plan that is right for you.

### What do our customers say about our field technicians?

*"Eaton has taken care of us through the years and continues to take care of us."*

– Steve Hurst, Project Leader, Southwest Airlines

*"He is one of the best technicians I have ever seen for a UPS company. He's very meticulous and very sharp. He really knows what he's doing. Plus, he's just a really nice guy."*

– Jim Bak, PC Network Specialist, Gate Petroleum

*"I'm perhaps old school, but to me, service has become a lost art over the years. I find Robert to be that rare individual who, in addition to being technically competent, projects the old style of service that makes customers feel like they are important."*

– James McDonald, MIS Systems Manager, Indiana Packers Corporation

**For in-depth stories on our field technicians, visit [www.eaton.com/UPSservices](http://www.eaton.com/UPSservices)**



## 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.

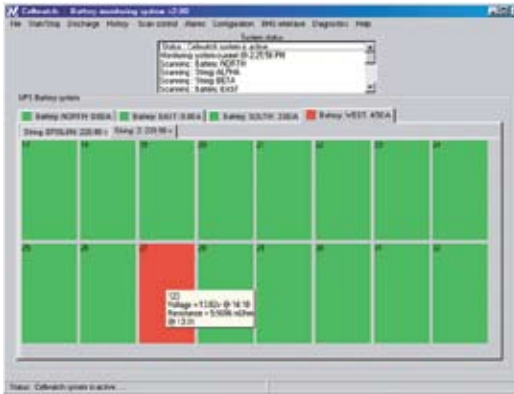
For more information on replacement UPS batteries for your specific application, or to obtain a copy of our informative battery handbook, please visit [www.eaton.com/UPSbatteries](http://www.eaton.com/UPSbatteries).

# Service and support solutions

## 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, 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.

Cellwatch software includes one-year corrective maintenance coverage on parts and labor and a 24-hour hotline for technical support. An optional comprehensive service plan is also available.



With eNotify Remote Monitoring, Eaton's Remote Monitoring Command Center is available 7x24 to monitor the health of your UPS.

## Contact our dedicated team

Whether you have multiple sites or multiple vendors, Eaton is your total solutions provider. We deliver unsurpassed expertise through our services solutions and stand behind every product with 7x24 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.

## eNotify Remote Monitoring

Imagine the security of having trained service technicians standing by around-the-clock to attend to the needs of your UPS. With eNotify analysis software, processors and firmware inside the UPS collect performance data and send status messages to Eaton's Remote Monitoring Command Center, where analysts are on duty 24 hours a day, 7 days a week. eNotify evaluates the health of your UPS by comparing current and historical performance data with specified parameters. The analyzed data is then used to make accurate performance reports of UPS status.

Daily heartbeat data reveals the status of batteries and Eaton sends reports to customers through the Internet using a firewall. The comprehensive Customer Monitoring Report provides a summary of the top 10 performance and environmental parameters, battery events, availability percentage and comparative status against recommended applications—so you can always know the current status of your UPS and its batteries.

If performance data matches pre-programmed alarm conditions or if the analysis software detects an anomaly, an alarm is triggered. Because they continually monitor your UPS, Eaton's Remote Monitoring Command Center can contact you immediately if there is an emergency. Depending on your service plan, coordinators may dispatch technicians with the appropriate skills—and the appropriate parts—to make repairs or replacements.



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