

Services overview

# Service matters

Power Quality UPS  
services and support

November 2018

**EATON**

*Powering Business Worldwide*

# Welcome

Purchasing an uninterruptible power supply (UPS), however big or small, is an investment—in your business or organization, peace of mind, reliability and bottom line. Here's everything you need to know about the service and support we offer so you can make the most of your UPS for many years to come.

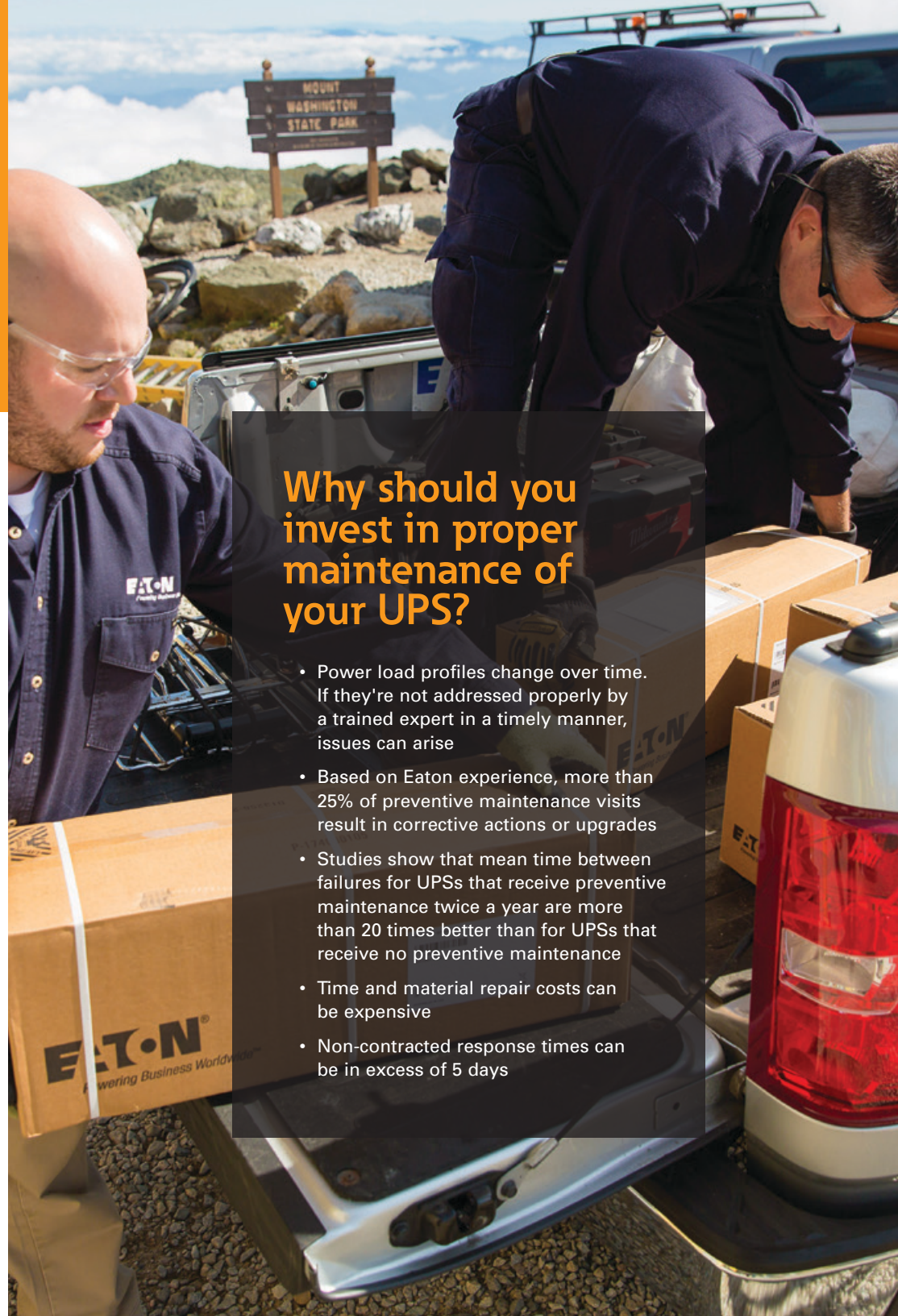
The old adage "If it isn't broken, don't fix it," may be feasible in some circumstances, but applying it to the maintenance of a UPS can have devastating consequences. Why? Because you rely on your UPS to deliver continuous power without disruption. Proper service is critical to ensuring optimal performance while also minimizing the risks of downtime and extending the life of your UPS.

This brochure outlines some of the basic concepts and benefits of UPS service. It's important to understand the coverage that comes with your UPS and then evaluate your options for a long-term plan. That way, you can keep your equipment functioning at its highest level of performance for many years.

If you have questions about your UPS or service coverage, visit us online at [Eaton.com/UPSservices](https://www.eaton.com/UPSservices). If you'd prefer to speak with someone directly, call us at 1.800.843.9433 in the United States or 1.800.461.9166 in Canada.

## Why should you invest in proper maintenance of your UPS?

- Power load profiles change over time. If they're not addressed properly by a trained expert in a timely manner, issues can arise
- Based on Eaton experience, more than 25% of preventive maintenance visits result in corrective actions or upgrades
- Studies show that mean time between failures for UPSs that receive preventive maintenance twice a year are more than 20 times better than for UPSs that receive no preventive maintenance
- Time and material repair costs can be expensive
- Non-contracted response times can be in excess of 5 days



## Why should you have a preventive maintenance plan?

A preventive maintenance service plan for your UPS is much like completing routine repairs and inspections on your vehicle. Not only is completing scheduled maintenance recommended by every auto manufacturer, but the findings can help detect a range of ailments before they become serious issues.

Without proper maintenance, many UPSs fail prematurely since consumable components such as batteries, capacitors and fans wear out from normal use. Preventive maintenance is really one of the most cost-effective measures you can take to ensure the ongoing health of your critical equipment and overall business.

Because regular maintenance practices so dramatically improve UPS reliability and performance—while notably deterring downtime—it’s an essential component to any end-to-end solution.

With more than 40 years of experience servicing industry-leading power quality equipment, Eaton can help you maintain the reliable performance of your UPS, giving you a higher return on your investment.

## Look out for the common causes of UPS failure

There are numerous reasons why UPSs fail. The most common causes are:

1. **Batteries.** Studies show that a leading cause of UPS failures is bad batteries, with temperature and cumulative discharges cited as the primary culprits.
2. **Fans.** Some fans fail because of their own electrical or mechanical limitations or when their ball bearings dry out. Fans may perform well for more than 10 years of continuous use, while others run for only short periods before locking up for mechanical reasons.
3. **Capacitors.** Like batteries, capacitors degrade over time. When a capacitor fails, there may not be any immediate visible effects.
4. **Transient spikes.** Damage may be caused to the input side of the UPS (filter/rectifier) when a transient lightning spike occurs.

## Know what to expect as your UPS gets older

During a preventive maintenance visit, Eaton technicians inspect, test, calibrate, update and clean UPS components, as well as update software. You’ll receive a report at the end of the visit detailing the results of the inspection and specific recommendations for remedial actions, proactive replacements and upgrades.

We have services to help you across the life of your UPS—from planning for a UPS to its retirement. Here’s what we recommend at each stage.



### 1 Plan

- Power infrastructure assessments
- Design assistance
- Product customization

### 6 Retire

- EOSL notification
- De-installation and removal
- Fair market value recovery
- Environmentally responsible recycling

### 2 Install

- Factory witness testing
- Assembly and startup
- Electrical installation (IT resellers)
- Load bank testing

## Lifecycle of a UPS

### 5 Update

- Battery replacements (year 4-6)
- Capacitor replacements (year 6-8)
- ESS/VMMS upgrade
- kVA upgrade

### 3 Maintain

- Service agreements
- Preventive maintenance
- Parts and labor coverage
- Response (2, 4, 8 hours)
- Firmware and FSB updates
- IR scanning
- Spare parts kits
- PQ metering

### 4 Monitor

- PredictPulse™ remote monitoring
- Cellwatch remote monitoring
- IPM software installation

*“Eaton’s large local presence and responsive services assist us in maximizing reliability and scalability to meet customer needs, while also playing a key role in our ability to maintain uptime per customer service-level agreements and position us as an industry pricing leader . . . The mean time to repair is excellent.”*

**Jason van Gaal, founder and chief executive officer, ROOT Data Center**

# Recommended preventive maintenance schedule for 10 kVA+ UPSs

When to do what, so you can plan for the future. Here's our recommendation on keeping your UPS running in tip-top shape.

	Year																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Preventive maintenance (PM) visits</b>																				
UPS PM	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Battery PM	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Performance Testing (Load Bank, Infrared Scan, PQ Meter)			◆			◆			◆			◆			◆			◆		
PDU/RPP/Static Switch PM			◆			◆			◆			◆			◆			◆		
<b>System Components (Inspect, test, calibrate, update, clean and recommend remedial actions as necessary)</b>																				
Integrated System Bypass Module (ISBM) Interface Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Uninterruptible Power Module (UPM) Interface Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Integrated System Bypass Module (ISBM) Control Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Uninterruptible Power Module (UPM) Control Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Static Switch Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Power Module	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Integrated System Bypass Module (ISBM) Power Supply Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Uninterruptible Power Module (UPM) Power Supply Board	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Mini Communication Server Board (CSB)	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Display Assembly	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Firmware <sup>1</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Field Service Bulletins <sup>2</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
<b>Consumable Parts (Inspect, test, calibrate, clean, update and recommend remedial actions as necessary. Proactive full replacement schedule is listed in RED.)<sup>3</sup></b>																				
Batteries (Valve Regulated Lead Acid) <sup>4</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Batteries (Flooded / Wet Cell) <sup>4</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (DC Electrolytic) 9330, 9355, 93E, 9390, 93PM 208V, 9395 <sup>5</sup> , 9395 High Performance	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (DC Electrolytic) 93PM 480V <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (DC Electrolytic) 9315	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (AC and DC Oil Filled) 9395 High Performance <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (DC Oil filled) 9390, 9395 <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Capacitors (AC Oil filled) 9315, 9330, 9390, 9395 <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Fans <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Air Filters <sup>5</sup>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

## Additional services and upgrades

- **kVA upgrade:** Increase the power capacity of your UPS
- **Cellwatch battery monitoring:** Daily battery monitoring increases overall system reliability
- **PredictPulse remote monitoring:** 24x7 real-time monitoring of your UPS and battery systems by trained Eaton personnel
- **Energy Saver System (ESS):** Reduce your utility bill by maximizing the efficiency of your UPS to 99% without sacrificing reliability (9390, 93PM and 9395 UPS models)

1. Firmware updates are performed as necessary with customer approval. Parts if required are included at no charge for customers with service agreements with full parts coverage, otherwise billable.

2. Field Service Bulletins are evaluated for potential updates. Parts if required are included at no charge for customers with service agreements with full parts coverage, otherwise billable.

3. Proactive full replacements of batteries, capacitors and fans are not covered under UPS or battery PMs, nor under standard Eaton service agreements, but can be ordered as a separate service.

4. Eaton recommends full replacement of sealed batteries between 3-5 years of age and flooded batteries between 12-15 years of age.

5. Individual parts are replaced as applicable and necessary during PM visits. Parts if required are included at no charge under service agreements with full parts coverage, otherwise billable.

# Choosing the right service approach

Finding a service plan to ensure continuous power over a typical UPS lifecycle can be a relatively easy process. Now that you have a better understanding of why service is so important to extending the life of your UPS and its application, here are some questions to consider as you select the best coverage options.

## 1. What type of UPS service do I need?

- **Onsite repair** is primarily for large or hard-wired UPS products. Just contact Eaton's dispatch and customer care center and a factory-trained field technician will arrive at your site to diagnose and repair electronic or battery-related problems.
- **Depot exchange** (repair or replace) is primarily for smaller UPS products. Ship the UPS to a repair facility and we will return the repaired unit or a refurbished one.
- **Advance swap depot exchange** is primarily for small UPS products. Contact us and we will advance ship a refurbished unit.

## 2. Do I buy a support agreement, extended warranty or pay as I go?

- **Support agreements**, or service contracts, usually combine parts and labor coverage (electronics, batteries or both), one or more UPS preventive maintenance inspections annually, and a combination of coverage hours and arrival response time. Plans can be tailored to meet almost any need.
- **Extended warranties** may also be purchased for many UPS products. A warranty commonly covers specified parts and labor, such as electronic components for a fixed period of time, but may not include 24x7 coverage or arrival response time. Warranties also don't include preventive maintenance, but extra services can be purchased in addition to a warranty extension.
- **Time and material (T&M)** service is a pay-as-you-go approach where once something breaks, you contact Eaton and we schedule a technician to conduct the repair. T&M can be done via depot repair or onsite, based on the product, and can be expensive depending on what needs to be repaired. The uncertainty of knowing when a field technician will arrive can make T&M an unacceptable service solution for some organizations. Eaton's contract customers always take priority, resulting in T&M response times of up to five days based on the product and location for non-contract customers.

## 3. What should be covered?

- **UPS electronics parts and labor.**
- **UPS batteries, parts and labor.** Often the leading cause of failure, batteries generally need to be replaced every five years or less.
- **Preventive maintenance.** A preventive maintenance visit allows a field technician to annually inspect, test, calibrate and upgrade any UPS and/or battery components, while ensuring factory-specified performance.
- **Remote monitoring.** Remote monitoring allows us to view the UPS and battery system to expedite repairs and look for potential problems prior to failure. In the event of a critical alarm on your UPS, we notify you of the alarm and make a recommendation for how to address it. If a service contract is in place, a technician can be automatically dispatched to remedy the problem.

## 4. How much service do I need and how fast do I want my service delivered?

- Around the clock or continuous service is called **24x7 coverage**. A field technician will respond or deliver service at any hour, including weekends and holidays.
- **8x5 coverage** is limited to standard business hours (8 a.m. to 5 p.m.), Monday through Friday. If a problem occurs, it will be resolved within these hours.
- **Eight-, four-, two-hour or next business day response** defines how quickly the field technician arrives after you have requested a service visit. For some situations, response time can be very important as it determines how fast the field technician can begin resolving a problem.

## 5. How long should I plan for a UPS to last and how much should service cost?

- **Large UPS products** usually have a 15- to 20-year life span.
- **Small UPS products** can last 10 or more years, but are often replaced much sooner.
- **All UPS product life expectancies** can be maximized or extended via routine preventive service, part replacements and upgrade/modification kits.
- **The total cost of ownership (TCO)** varies widely based on the size of UPS, amount and type of batteries, quantity and type of services desired, and application. Maintenance costs can vary between 5 and 30 percent of product purchase price per year.

The answers to these five questions are not always clear. Eaton has trained specialists available to answer your questions and recommend a service solution tailored to your situation and budget.



## Service spotlight: PredictPulse remote monitoring



When you're on-the-go, the PredictPulse mobile app keeps you connected to your devices by providing an overview of open alarms.

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 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 Eaton 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 managing IT equipment, reduced risk, access to real-time status information and expedited repairs. You'll also receive a monthly report summarizing the past 30 days of status, performance and alarms.

Visit [Eaton.com/PredictPulse](https://Eaton.com/PredictPulse) for details.



*"With [remote monitoring], any alert immediately goes to our Network Operations Center, as well as to the people that we would turn around and call anyway. With Eaton, the technician is in the truck and on the road before they even hear from us—and that's a big deal."*

**Kevin Dohrmann,**  
chief technology officer, CoSentry

# U.S. warranty and support features included with new products

Our UPS and battery systems are backed by a standard factory warranty, so you know you're getting the performance and reliability you need. See below for the specific startup and warranty coverage for your UPS, battery and power distribution equipment.

Warranty*	9315, 9395, 9395 High Performance, 93PM	9390	9355, 9390IT	93E	9155	9PX, 9130, FERRUPS (up to 3.1 kVA)	BladeUPS	9170+, FERRUPS (4.3 – 18 kVA)	PDU & STS	RPP
<b>Limited factory warranty</b>	1-year parts, 90 days onsite labor from startup <sup>1</sup>	1-year parts, 90 days onsite labor from startup <sup>1</sup>	1-year parts, 90 days onsite labor from startup <sup>1</sup>	1-year parts, 6 months onsite labor from purchase OR 1-year onsite labor from purchased startup <sup>2</sup>	2-year parts, 90 days onsite labor from startup <sup>3</sup>	2 years from date of purchase <sup>4</sup>	18 months from date of shipment <sup>5</sup>	2-year parts, 90 days onsite labor from date of purchase <sup>6</sup>	If startup is purchased: 1-year parts and onsite labor from startup <sup>7</sup>	1-year parts, 90 days onsite labor from date of purchase <sup>8</sup>
<b>Additional bundled service coverage</b>	1-year total onsite labor from startup date (Service Protection Plan)	1-year total onsite labor from startup date (Service Protection Plan)								
<b>24x7 onsite eight-hour response priority coverage</b>	■	■		■ With startup purchase						
<b>Bundled startup service</b>	■ 24x7	■ 8x5	■ 8x5		■ 8x5					
<b>24x7 Customer Reliability Center triage and dispatch</b>	■	■	■	■	■	■	■	■	■ With startup purchase	■
<b>24x7 technical support access</b>	■	■	■	■	■	■	■	■	■ With startup purchase	■
<b>Depot exchange</b>					■	■	■	■		
<b>Lifetime load and protection guarantee</b>						■		■		
<b>PredictPulse remote monitoring (w/monthly monitoring summary report)</b>	■ Includes connectivity parts upon enrollment	■ 9390 includes connectivity parts upon enrollment (excludes 9355)	■	■	■				N/A	N/A

\*For complete details and footnote references, visit [Eaton.com/StartupWarranty](https://www.eaton.com/StartupWarranty).

# Eaton UPS support agreement features

Eaton service plans	PowerTrust Value	ProActive	PowerTrust	PowerTrust Preferred	Flex
Parts and labor for electronics	■	■	■	■	Custom service contracts
Parts and labor for batteries	□	□	□	□	
8x5 onsite corrective maintenance	■				
24x7 onsite corrective maintenance		■	■	■	
Next business day response	■				
8-hour response		■	■	■	
4-hour response (where available)		□	□	□	
2-hour response (where available)		□	□	□	
8x5 UPS preventive maintenance visit	1 per year	□	1 per year	□	
24x7 UPS preventive maintenance visit	□	1 per year		2 per year	
Battery preventive maintenance visit	□	□	1 per year	2 per year	
PredictPulse remote monitoring service	■	■	■	■	
Discounted spare parts & upgrade kits & T&M		30%	30%	30%	

■ Included feature    □ Optional feature



# Why choose Eaton?

According to customer surveys, here's why customers choose Eaton Service:

- Relationship with field technicians and their expert product knowledge
- Quick response by tapping into more than 240 field technicians
- Locally available field parts inventory
- Increased reliability by having an experienced technician with factory training and technical support resources who focus exclusively on Eaton products
- Reputation of being an outstanding service provider who delivers on promises
- Commitment to customers and their products
- Ability to manage risk of downtime and avoid financial costs of power disruption
- Ability to have a single source for battery replacements, upgrades, lifecycle and other service needs
- Price for value

## Deep support structure

A key component of any service plan is the peace of mind that help will be there when you need it, regardless of the time of day or issue. In addition to providing highly trained team members onsite, Eaton service customers also have access to a host of additional resources at their fingertips, including:

- **Dedicated team of professionals**  
We offer you round-the-clock access to our power quality experts.
- **Technical support**  
Our technical support engineers have expertise in power, electrical engineering, software and connectivity, batteries, UPSs and related products.
- **Service delivery**  
Emergency and scheduled maintenance for service plan contract customers always takes priority over T&M customers.
- **Parts you need**  
When you rely on an Eaton service plan, rest assured that every factory-trained field technician stocks a solid inventory of parts to remedy UPS emergencies.



## Range of service offerings

We understand that service plans are not "one size fits all." That's why we offer a broad range of service options, designed to meet the varied requirements and applications of businesses of all shapes and sizes.

## Highly skilled technicians

A major differentiator for Eaton Service is our extensive network of more than 240 factory-trained field technicians across the U.S. and Canada.

Our technicians receive ongoing product training and certification. They also have constant exposure to Eaton UPS products and legacy brands, including Powerware, Exide Electronics, International Power Machines (IPM), Best Power, Deltec, Lortec and Fiskars. Because of their familiarity with these systems, Eaton field technicians deliver advanced troubleshooting and a reduced mean time to repair.

## Priority on safety

All electrical equipment involves risk, so standardized safety processes are of the utmost importance to Eaton. Be assured that when working at your site, our technicians will have your equipment in mind and will maintain a safe and hazard-free environment. They have the training, knowledge, proprietary tools and personal protective equipment to perform their jobs efficiently while maintaining a safe work area.

*"With some service companies, it seems as if you are working for them. There are so many other things going on in the hospital and I don't have time to hold hands and call people. I want someone who is here to help me, and with Eaton, that's what I get."*

**Fidel Bustamante,**  
lead electrician, Children's Hospital  
Los Angeles

**240**  
experienced,  
factory-trained  
technicians

**Access**  
to parts inventory  
maintained by  
technicians

**Risk**  
management to  
control downtime  
and costs

# Soaring with service from Eaton



An Eaton service technician performs maintenance on one of Windstream's 10 Eaton UPSs.

*"For a business like ours, a potential outage like that would have cost us upwards of \$2 million." But the millions in payout in service level agreements wouldn't even be the worst outcome: "With something like that, you're talking about at least five to seven years of reputation impact, which is very hard to recover from."*

Curious about how much a service plan could save you? Check out our downtime cost calculator at [Eaton.com/downtimecost](https://www.eaton.com/downtimecost)

*"By partnering with Eaton, we are able to maximize uptime for our customers. We have excellent equipment, plus great technicians providing all of the service and maintenance that we need. They are taking care of our units so our units take care of us."*

**Louis Valentino, director, data center operations**

## Success story: Windstream Hosted Solutions

Windstream Hosted Solutions (Windstream) is a FORTUNE 500 company and leading provider of advanced network communications that operates 27 data centers across the U.S. Within its 36,000-square-foot flagship Raleigh, N.C., data center, Windstream hosts the operations of more than 1,500 customers in industries ranging from financial to pharmaceutical to research. Housing anywhere from half of a cabinet to 70 cabinets' worth of equipment for each client, it's vital that Windstream maintains continuous uptime.

Windstream has 10 Eaton UPSs deployed in the Raleigh facility and additional units at other sites, so it relies on Eaton for exceptional power protection solutions and an unparalleled level of service. "We want to be able to provide great service to our customers and Eaton's superior service helps us do just that," Director of Operations Louis Valentino explained.

Windstream previously had other manufacturers' UPSs installed that have since been swapped out for Eaton, "just so they could be serviced by our Eaton technicians," Valentino revealed. "We rely heavily on the support that Eaton gives and the people they send. They specifically went above and beyond on two different occasions where we had major issues."

Valentino also shared that the company's generator once failed to start after losing utility power. The UPSs stayed on battery and held the facility's entire load—an outcome he attributed to an Eaton technician recently recommending that he add a battery cabinet. "Thankfully, all of our maintenance had already been taken care of well in advance, so we were able to stay on battery until the generator started with no problem. By following Eaton's recommended maintenance, the equipment is able to work as designed."

Thanks to the UPSs and service plan, Windstream can focus on the demands of its business with no worries about downtime. Valentino rests easy knowing that "from the management to the sales reps to the technicians, it's not a business relationship with Eaton, it's a partnership."

Watch this video for the full story:  
[Eaton.com/PQsuccess](https://www.eaton.com/PQsuccess).



**Once a year Windstream has Eaton come out for a full preventive maintenance service. We take the UPSs off load, put them on bypass and strip them down to make sure everything is working properly.**

# Maintaining uptime in the world's worst weather



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



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.

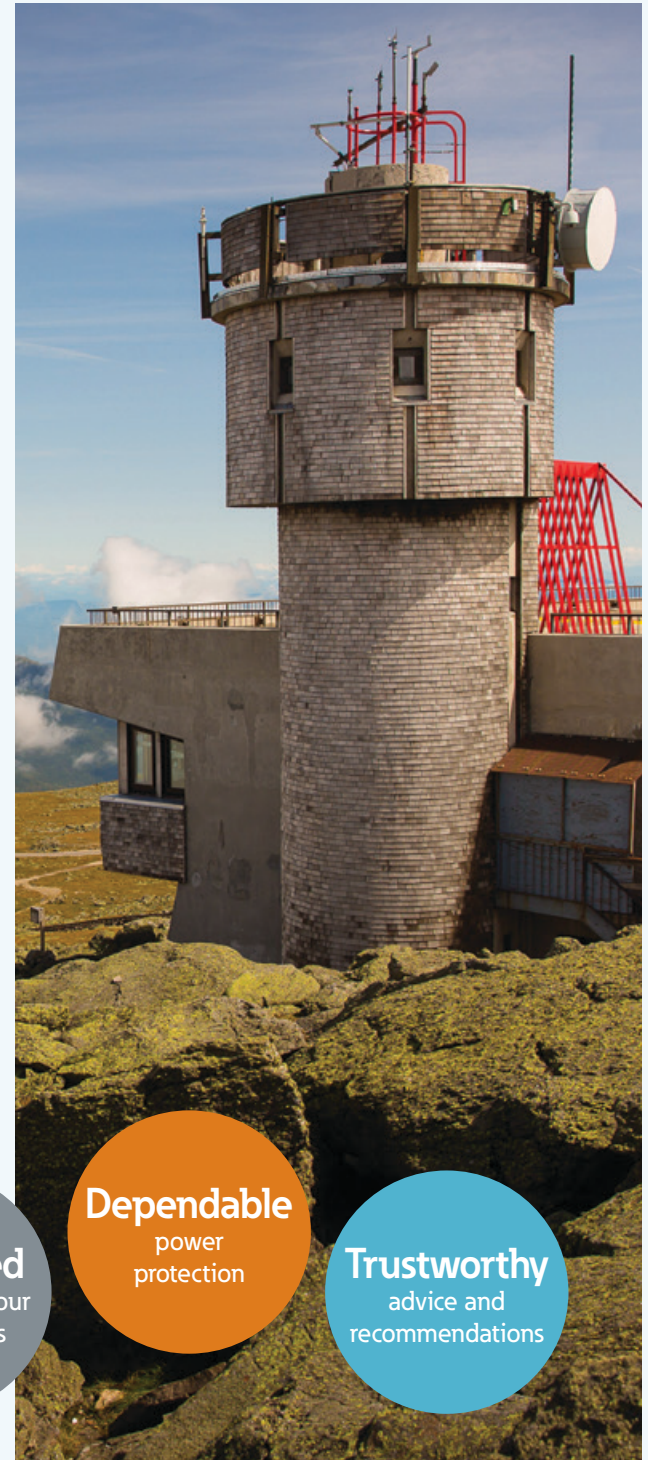
MWO deployed a 15 kVA Eaton 9355 UPS years ago with more than 170 minutes of runtime to help ensure that even when the most extreme weather hits, the organization can continue gathering and storing vital weather data that it reports to the National Weather Service. While the 9355 performed flawlessly 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](https://www.eaton.com/MWO).



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