

The ABCs of UPS Service

A white paper from Eaton Corporation

Executive Summary

Eaton Corporation, a global leader in power quality, distribution and control, recommends the inclusion of a service plan in order to maximize the performance and reliability of an uninterruptible power system (UPS). This white paper examines the basic concepts of UPS service.

Introduction

The old adage of, “If it ain’t broke, don’t fix it” may be feasible in some circumstances, but applying it to the maintenance of a UPS can have devastating consequences. Because a company relies on a UPS to deliver continuous power without any disruption to its business, proper service is a critical component to ensuring optimal performance from a UPS while minimizing the risks of downtime.

Research indicates that regular preventive maintenance (PM)—which affords the opportunity to detect and repair potential problems before they become significant and costly issues—is crucial in order to achieve maximum performance from your equipment. In fact, studies show that routine preventive maintenance appreciably reduces the likelihood that a UPS will succumb to downtime. The 2007 Study of Root Causes of Load Losses compiled by Eaton revealed that customers without preventive maintenance visits were almost *four times more likely* to experience a UPS failure than those who complete the recommended two preventive maintenance visits per year.

The basics of selecting UPS service

Selecting a UPS service plan for reliable power applications can range from a very complex decision to simply ascertaining what is available or recommended. Selecting an extended warranty or support plan for a UPS to insure continuous power over a typical life cycle can also be a relatively easy process.

To select the best coverage for your UPS and its application, consider the following five questions:

1. What type of UPS service do I need?

A. Depot exchange repair or replace

You contact the UPS service provider and then ship the UPS to a repair facility. The service provider returns the repaired unit or a refurbished unit to you.

B. Advance swap depot exchange

You contact the UPS service provider who then ships a refurbished unit to you. The original UPS unit is returned to a repair facility.

C. On-site repair

You contact the UPS service provider and a factory-trained field technician arrives at your site to diagnose and repair electronic or battery-related problems.

Smaller UPS products (below 1,000 VA) generally can be repaired at a depot, while products over 1,000 VA and up to 15 kVA can either be repaired at a depot or serviced on-site. Larger UPSs that are either hardwired (cannot be unplugged) or too heavy to ship can only be serviced via on-site field technicians.

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

- A. **Support agreements**, or service contracts, usually combine parts and labor coverage (electronics, batteries or both), at least one or more UPS preventive maintenance inspections annually, and a combination of coverage hours and arrival response time. Plans can be tailored to meet most any need. Special features like remote monitoring, battery replacement insurance and spare part kits may also be added.
- B. **Extended warranty** (or basic warranty) 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 will not include 7x24 coverage or arrival response times. Nor will warranties include preventive maintenance, although extra services can be purchased in addition to a warranty extension. The more additional services that are added to a warranty, the closer you are to a support agreement.
- C. **Time and Material (T&M)** service is a pay-as-you-go approach in which when something breaks the service provider conducts a repair. T&M can be done either via depot repair or on-site, based on the type of product. T&M can be expensive depending on what needs to be repaired. In addition, the uncertainty of knowing when a field technician will arrive can make T&M an unacceptable service solution for some customers. Support agreement (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.

Remember that warranties cover repairs but do not promise when or how fast repairs will be made. Support agreements include repairs, time of repair and the speed of arrival (or advance swap exchange vs. waiting for a returned product).

Pay special attention to which items are covered in a warranty or support agreement. Warranties or support agreements for large UPS models usually cover only electronics, with battery coverage available as an optionally purchased item. Twenty percent of customers purchase battery coverage on larger UPS models but most pay as they go.

3. What should be covered?

- A. **UPS electronics parts and labor coverage**
- B. **UPS batteries parts and labor coverage**
Often the leading cause of failure, batteries, generally need to be replaced every five years or less. Batteries may need to be replaced more frequently, especially if they are discharged frequently or operate in a warm environment.
- C. **Preventive maintenance**
A preventive maintenance visit allows a field technician to annually inspect, test, calibrate and upgrade any UPS and/or battery components, while insuring factory-specified performance.
- D. **Remote monitoring**
Remote monitoring allows the manufacturer or service provider to view the UPS and/or battery system to expedite repairs and to proactively look for potential problems prior to failure.

Warranties and support agreements can include separate pieces of coverage or maintenance. A UPS warranty may cover electronics labor for 90 days and parts for one year, while batteries are covered separately by the manufacturer's warranty. Some UPS products bundle both a warranty and support agreement together, effectively providing one or two-year parts and labor coverage for either the electronics or electronics and batteries. More information about the differences between warranty and support agreements is detailed below.

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

- A. **7x24 coverage** is around the clock or continuous service. A service technician will respond or deliver service at any hour, including weekends and holidays.
- B. **5x8 coverage** is limited to standard business hours, Monday through Friday (8:00 AM to 5:00 PM). If a problem occurs, it will be resolved within these hours.
- C. **Eight, four, two-hour or next business day response** defines how quickly the service technician will arrive 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.

Think of 7x24 or 5x8 coverage as the service provider's hours of operation and the 8/4/2-hour response time as their promised time of arrival. Plans may be purchased in a variety of combinations, but two- and four-hour response times are limited to major markets where the vendor has an adequate number of field technicians to meet the response time commitment 99.9% of the time.

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

- A. Large UPS products usually have a 15 to 20-year life span.
- B. Small UPS products can last 10 or more years, but are often replaced much sooner.
- C. All UPS product life expectancies can be maximized or extended via routine preventive service, part replacements and upgrade/modification kits. Batteries and capacitors can be replaced to rejuvenate a UPS and provide years of reliable power protection.
- D. 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. For example, is the UPS frequently discharging its batteries? Very basic warranty coverage may cost five to ten percent of the product purchase price and a comprehensive, premium support agreement could exceed 35 percent of product purchase price per year.

Conclusion

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