



Your Next Generation UPS

**ARE YOU
PREPARED?**

**RELIABLE, STANDBY POWER -
YOUR NEXT GENERATION UPS FROM ESPi**

BACKGROUND

The advent of fiber optics was a major turning point for telecommunications and the telecom industry. Faster transmission speeds, reduced signal loss, and greater bandwidth helped revolutionize data transmission at the very moment when demand was exploding along with the Internet. Today, telecom companies continue to expand their fiber optic networks to millions of homes and businesses in every region of the country.

For telecommunications providers whose installations are currently expanding, the planning process to design a resilient, future-proof network can be a time-consuming process. However, this planning can prove to be an invaluable investment over time. Researching equipment and current technology, while anticipating future growth in demand for connected devices in the home and workplace is difficult, but is also a key component to intelligent network planning.

Fiber-to-the-home represents a practical way to future-proof telecom networks and generate revenue for decades to come. But FTTh also places new demands on telecom providers. Every part of the network infrastructure must function at a higher level. Once end-users are connected to fiber optic networks, they expect what fiber delivers – fast connection, high throughput, and 24/7 service with no interruption.

Whether it is for business, single-family home or multiple dwelling units, dependable internet connectivity is no longer just an expectation, it's a necessity. An effective, yet often overlooked way to improve network resiliency is the utilization of Uninterruptible Power Supply [UPS] units at the business or residence. Quality UPS units prevent or minimize the duration of service disruptions caused by utility power variations, weather related outages, restoration delays, etc.

This whitepaper will highlight the importance of battery backup to the residence or business and why UPS units manufactured by ESPI provide a strategic advantage over competitive brands.



POWERFUL PERFORMANCE

Power is the backbone to every network. Accurate network planning should account for unexpected downtime and place a great deal of importance on the availability of uninterruptible power. The strengthened network and continuity of service leads to increased customer satisfaction and long-term loyalty.

In past years, a disruption in service may have been acceptable. But in today's world, making compromises or improvisations on the UPS equipment powering your network has the potential of affecting your customer's livelihood. The availability and utilization of reliable, easy-to-install back-up power equipment to the residence or business insures they have uninterrupted power at a time when it is valued the most.

How do you make sure your subscribers are covered? Using a good battery is a start. ESPi products - such as the TITAN Outdoor UPS, NEO Indoor UPS, TITAN-24 UPS, TITAN-XL UPS and TITAN Solar UPS - utilize lead acid batteries with an 8Ah rating. Containing 11% more capacity than batteries found in other competitive UPS models.

Most common UPS batteries have only a 7.2Ah rating and a lifespan of only 2 to 5 years. In addition, they provide only 9 hours of standby power when the battery is fresh. ESPi's UPS batteries provide up to 14 hours of standby power and 8 year lifespan.

RELIABLE ALARMS

When discussing their experience with alternative UPS products, field technicians commonly addressed the problematic alarm wire connectors and the tiny jewelers' screws used to secure them. Technicians shared stories about failure to tighten the screws, resulting in poor connections and sporadic, unreliable alarms. Issues like these are inconsistent and time consuming to diagnose, resulting in additional service calls and time spent onsite.

Recognizing that you're not in the jewelry business and technicians are not likely to carry a jeweler's screwdriver around in their pocket, ESPi eliminated those seven tiny screws, replacing them with a push lever mechanism that makes it much easier to connect wires. The connector makes it easy to verify that connections are secure, creating up to a 30% time savings over a traditional screw terminal, and eliminates expensive follow-up truck-rolls.

ADVANCED DIAGNOSTICS

Many UPS manufacturers run a simple 30-second diagnostic procedure on the battery. This diagnostic test has proven to be inaccurate and over time has become a sore spot for telecom providers. Inaccurate test data leads to false reports of both a good and bad battery and potentially wasted truck rolls just to diagnose the issue.

All ESPi UPS units feature technologically advanced battery testing and diagnostics. Every 45 days the UPS load tests and cycles the battery during a 3-hour diagnostics test. These diagnostics tests are performed in the background and do not interrupt normal operation of the unit. Even more importantly, the diagnostic test helps to improve the health and longevity of the battery as well as the UPS unit.

LONGER BATTERY LIFE

Complementing and extending the battery's already long life, ESPI uses an innovative approach to battery charging with their Thermo-Amp Technology. This is an advanced onboard firmware engineered to temperature-compensate the charging process, maximize battery life, and reduce lifetime costs. By employing this temperature compensated battery-charging algorithm the UPS can extend battery life by a year or more - according to real world performance metrics and reports from leading battery manufacturers.

Most UPS chargers apply voltage at a constant rate regardless of the environmental conditions, typically charging based on a 77-degree temperature. In the chart, the flat blue line represents the constant voltage rate at which other manufacturers' charge their batteries - the same constant rate used to charge a child's toy car.

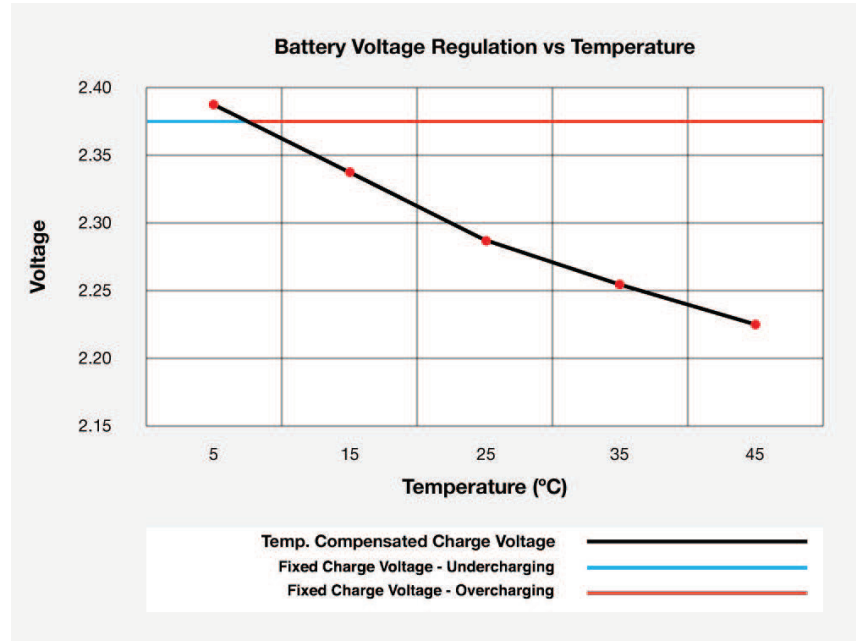


Figure 1. Temperature-compensated charging vs. constant-temperature charging

Of course, an FTTh UPS is anything but a toy. Units are commonly mounted in subscribers' power closets, garages, or attics, where temperatures can fluctuate by as much as 100°F. This kind of flat-line charging reduces battery life, ultimately costing telecom carriers more in service and replacement costs. In these instances, overcharging the batteries causes heat, battery failure and in extreme cases can cause a meltdown of the UPS.

On the chart shown above, the curved line shows the correct voltage that should be applied as the environmental temperature changes. ESPI's UPS units follow this charge curve. Thanks to the Thermo-Amp Technology, the charge being applied to the battery is exact and precise. The onboard processor continuously checks the environmental temperature probe and adjusts the charging voltage in real time. Precise charging under any environmental condition means that the UPS never overcharges nor undercharges.

Combining the 8Ah battery with the unparalleled efficiency of Thermo-Amp Technology, the TITAN Outdoor UPS, NEO Indoor UPS, TITAN-24 UPS, TITAN-XL UPS, and TITAN Solar can deliver up to 14 hours of standby power and a battery design life of 6 to 8 years - as much as 60% longer than standard batteries. Even with the longer lifespan they are backed by one of the best warranties in the industry - 3 years on electronics and 6 years - 4 years full and 2 years prorated - on the battery.

INTELLIGENT DESIGN

As a business with a telecom background, ESPI knows that installation and service are opportunities to increase operating costs or reduce them. Many of the intelligent design features originated as insights from field technicians who handle installs on a daily basis.

Most standard UPS units come equipped with a 9-foot cable to reach the AC outlet. Typically, these UPS units convert to DC power inside the UPS box. As many technicians will tell you, rarely is there ever an AC outlet in a convenient location within nine feet of the UPS. To solve the problem, telecom providers have been known to hire electricians to install outlets closer to UPS units – adding significant expense to the project.

ESPI UPS units, such as the NEO Indoor UPS, TITAN Outdoor UPS, TITAN-24 UPS, TITAN-XL UPS and TITAN Solar UPS have a solution driven design aimed at eliminating common installation challenges. ESPI UPS units convert AC power to DC power at the outlet, providing the unique ability to mount the UPS unit up to 115 feet from an AC power outlet and 70 feet from the ONT. This solution allows for more flexibility when choosing a location to mount the UPS unit, ultimately leading to less time spent on site and increased productivity.

SERVICEABLE PARTS

Many UPS units make it difficult to swap out components. For a field technician to replace a failed unit, technicians must remove the unit from the wall and replace the entire UPS.

The UPS units developed and manufactured by ESPI are different. Modular in design, its battery, circuit board, and fuse can all be replaced in the field – without removing the unit from its mounting. For technicians, the modular UPS is easier and faster to service. For carriers, this means service calls completed in less time and another reduction in operating expenses.

RESET BUTTON

ONTs sometimes need a reboot. It might sound like a simple issue, but improved UPS design makes it another cost that ESPI eliminates. On competing brands when an ONT fails, a field technician is dispatched to unplug the UPS and remove a battery terminal just to complete the reset.

All ESPI UPS units feature a simple external reset button on the front side of the controller, making it easy for the customer to reboot the system instead of requiring another truck roll.

POWER OFF BUTTON

Do you have subscribers in your network that are rentals, vacation or a part-time home?

On ESPI UPS units – TITAN Outdoor UPS, NEO Indoor UPS, TITAN-24 UPS, TITAN-XL UPS and TITAN Solar UPS – the technician simply unplugs the unit and presses the reset button. Performing this procedure ensures the battery will be stored in a charged state good for up to 6 months. This is the optimal state for storing a battery and protects from early battery failure in the future.



MADE IN AMERICA

Do long lead times have you stressed out? The ability to accurately forecast and maintain sufficient inventory levels is currently one of the biggest challenges facing the telecom industry. Failing to plan for unexpected supply chain disruptions inevitably lead to improvised solutions. Talk to any plant manager or purchasing agent and they will tell you, equipment on hand is everything. Without it, increased expenditures, work stoppages and service disruptions become a major threat to both the short-term and long-term success of a business.

The full line of ESPI's UPS units are made in America. Centrally located in Clay Center, Kansas, ESPI manufactures products using components sourced domestically and maintains a fully stocked 28,000 square foot warehouse. By handling the sourcing, manufacturing, warehousing, and order fulfillment, ESPI is able to control and plan ahead for any external factors that may cause supply chain disruptions. Resulting in some of the best in the industry lead times.

To maximize revenue, it's imperative to minimize operating expenses. Utilizing American made products such as the NEO Indoor UPS, TITAN Outdoor UPS, TITAN-XL UPS, TITAN-24 UPS, and TITAN Solar does exactly that. Better lead times allow for increased flexibility in meeting the needs of the customer and more money to your bottom line. Simply put, they're easier and faster to install, have a longer life, requires fewer services calls, shortened lead times and industry leading warranties. Add it all up, and UPS units from ESPI cost far less than other brands.

A UPS is not just a battery fitted with electronics, it's a business choice both for your bottom line and overall customer satisfaction. In today's telecom environment, you make the best choice when you invest in UPS units from ESPI.

