

PRODUCT SPOTLIGHT

PowerPulse® Battery Maintenance System

Ideal For Frequently-Charged Vehicles and Equipment!

PowerPulse uses our *ReNew-IT Pulse Technology*® to reduce battery downtime and increase battery life up to three times longer.

This unique, patented unit is a performance system that works automatically 24-hours a day. It's powered in two different ways. When the battery is being charged — by an on-board charger or separate charging system — it will use the charging current as a power source. The rest of the time PowerPulse uses a tiny portion of the battery's own energy.

It's ideal for forklifts, cars, trucks, emergency vehicles, golf carts and more. Choose from 12, 24, 36 and 48-volt models. The 12-volt unit even works with up to three 12-volt batteries in parallel. Five-year limited warranty.



TESTIMONIAL

"Fishing is a full-time job for me. Since installing a PulseTech battery maintenance system on my boat batteries, they hold a charge much longer. This is very important to me since my boat is essentially my office."

"Tackle" Terry Tuma
Fishing Professional & Freelance Writer
Minneapolis, Minn.

SUCCESS STORY

PowerPulse Improves Battery Performance On School Signals

The Houston Traffic Signal Division (HTSD) of the Texas DOT uses 28 solar-powered school zone flashers, and each uses two 12-volt batteries connected in parallel. It is vital that these signals operate reliably during school hours, that's why the HTSD started using both the PowerPulse® Battery Maintenance System and the 475 Digital Battery Analyzer from PulseTech to ensure maximum reserve capacity on all of the batteries.

Problem: In 1999 the HTSD was getting reports of inoperative school zone flashers. Powered by four-year old marine/deep cycle batteries, the solar signals were designed to hold enough reserve capacity for 21 days without sunlight. Unfortunately, they weren't. Using the 475 Digital Battery Analyzer, they detected lead-sulfate buildup on the battery plates which was causing a low reserve capacity rating in relationship to high voltage. Because the signals were stationary and the aluminum cabinets get very hot, it was a perfect environment for lead-sulfate buildup problems to accelerate.

Solution: HTSD ordered two 475 Analyzers for field service trucks to carry to test each signal when necessary. They also ordered 12-Volt PowerPulse units to help restore the solar signal batteries to their original design specifications.

Results: After 30 days, the reserve capacity increased to its original rating in each battery and the voltages increased to over



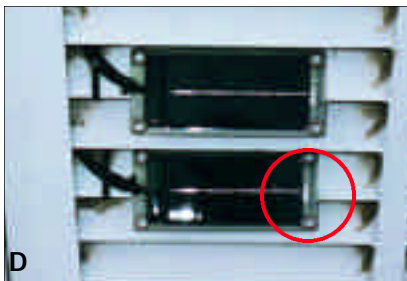
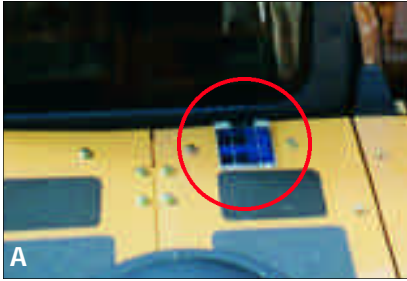
Photos: (Top) Solar-powered school zone flasher with a 12-Volt PowerPulse installed on the battery (bottom).

13 volts. Also, the voltages of the two batteries wired together in each solar cabinet evened out to within a tenth of a volt of each other so that one battery could not rob the other of voltage, a common problem in parallel applications.

"In February 1999, I was introduced to a product called PowerPulse," said Doug Vanover, traffic signal operations manager for the Houston TXDOT, "...the available amperage was increased in all four batteries, and voltages were equalized in both flashers. We are pleased with this technology."

LEARN MORE: See your local PulseTech dealer to see how our products can help increase your battery reliability. For a dealer near you, call **1-800-580-7554**. Or visit www.pulsetech.net

SAMPLE INSTALLS



Installing PulseTech products is easy and well worth the time. Shown above are examples of actual customer installations:

- A. A 24-Volt Solargizer (735X150) solar panel mounted on back of a power shovel.
- B. The circuit box of a 36-48 RediPulse (735X280) unit on a private golf cart.
- C. An Industrial 12-Volt Solargizer (735X130) solar panel mounted on the side of a camper.
- D. A large back-up generator for a major airline with two Industrial 12-Volt Solargizer (735X130) solar panels mounted on the side.

TECHTALK FAQ

Presenting a series of frequently-asked questions regarding the benefits of PulseTech products and how they can help your customers:

How much longer will the battery last with ReNew-IT Pulse Technology?

It's difficult to determine an exact length of time because service life of a battery varies depending on usage. By using ReNew-IT Pulse Technology, though, the life of your batteries will be extended dramatically.

Keep in mind that there is actually enough reactive material in a battery to perform the energy transfer process for many, many years, but sulfation buildup has always prevented that from happening. Now, by preventing, and even removing, sulfation buildup, PulseTech products enable batteries to fulfill their true potential in performance and life cycle.

Our products have been evaluated by several sources, including NASA, Stennis Space Center, Management Equipment Evaluation Program (U.S. Air Force) and the Army Research Lab. The answer from all is the same—"This product does exactly what you say it does!" One source even stated that "we estimate (Solargizer) will add at least eight to ten years of life".

Will PulseTech products benefit other electrical components on my vehicle?


Yes. By maintaining your batteries in peak condition, your alternator does not have to work as hard at recharging your vehicle.

The battery will accept a charge more readily and faster so alternator life should be extended. Plus, by maintaining available cranking amps, there will be more available energy going to your starter. The engine will turn over faster, so your starter should last longer, as well.

What are other common causes of battery failure that PulseTech can help?

It's interesting to note that other common causes of battery failure (buckled plates, shedding, overcharging, mossing, etc.) are directly related to sulfation buildup. For example, according to a leading battery service manual buckled plates may be caused by "being overcharged while sulfated or stored in a deeply discharged state." Sulfate buildup weakens the plates to a point where batteries must be overcharged to accept energy. This will then overheat and warp, or "buckle", the plates.

This service manual also relates shedding of the plates to sulfation buildup. It states that "if material has shed from the plates in small chunks, high charging rates on sulfated plates can be the cause."

All in all, each of these and other common causes can be avoided in most cases through the use of ReNew-IT Pulse Technology products. 

Scientifically-Proven Technology

Independent studies by researchers at Oakland University and Ohio State University recently confirmed that ReNew-It Pulse Technology increases battery efficiency and battery life dramatically. These two-year studies showed that our technology allowed a more even distribution of lead-sulfate crystals over the surface area of the battery plates. It also revealed a significant reduction in the size of crystals. These changes greatly improve a battery's ability to store and provide energy.

Our technology also prevents sulfate-induced corrosion that is the primary cause of shedding of active material on the plates. As a result, the life span of the battery is increased dramatically.



(Left) A battery plate covered in heavy sulfation buildup which reduces the battery's ability to accept, store and release energy. (Right) ReNew-It Pulse Technology™ cleans these lead-sulfate deposits off the plates and converts them to active electrolyte. This process exposes the active material on the battery plates which means batteries are stronger so you get up to three times longer life and maximum performance.



Visit this local PulseTech dealer today:

 PulseTech Products Corporation