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Dale A Erickson II  
President  
Satic Inc  
2801 Connery Way, Suite A  
Missoula, MT 59808

### **Sequoyah Elementary School SATIC test Feb 2010.**

The product works based upon power factor correction and harmonics reduction. It basically conditions the electrical power supplied to the device it is installed on as well as any other device that is connected to that branch circuit. Our utility provides power at about an 87-89% power factor. The SATIC raises the factor to 95+%. This causes the amperage consumed by the equipment to decrease and in turn lowers the wattage consumed, because voltage remains constant. This results in more design horsepower being utilized to drive the load and perform the work of the motor. Reducing harmonics causes less heat buildup in the motor windings resulting in longer life cycle for the equipment. The less efficient (older) the motor is the more savings will be delivered as a result of utilizing the SATIC product.

We reviewed the findings of our test at the Sequoyah Elementary school. We established a base line by monitoring the evaporator motor amp draw with Data Loggers at five minute integrals over a 14 day 24 hour per day time frame. We then placed the STAIC on the same equipment and monitored the equipment in the same manner with the same Data Loggers 14 days 24/7.

This test resulted in 40% reduction in power usage once the SATIC was installed. The calculated ROI was 9.5 months at the existing load on the equipment (heating only with only the evaporator motor running). This far exceeded our expectations and should not be considered typical, but I believe that an estimated savings of at least 25-30% on motor loads is very, very reasonable.

This product will result in savings on not only motor loads, but general purpose electrical circuits as well. It also provides surge and lightning protection for the equipment it is mounted on in then field.

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**ROI calculation:**

*Before SATIC was implemented:*

$$5.25 \text{ amp avg} \times 217 \times 1.732 / 1000 = 1.973 \text{ kw} \times 336 \text{ hrs} = 662.93 \text{ kwhr}$$
$$\times .10 \text{ per kwhr} = 66.29 \text{ per 14 days}$$

*After SATIC was implemented:*

$$2.94 \text{ amp avg} \times 217 \times 1.732 / 1000 \times 336 = 371.27 \text{ kwhrs} \times .10 \text{ per kwhr}$$
$$= 37.13 \text{ per 14 day period}$$

**Savings:**  $66.29 - 37.13 = 29.16 \text{ svgs per 14 days}$   
 $29.16/14=2.08 \text{ per day}$   
 $2.08 \times 300 \text{ school days} = 624.00 \text{ per year}$

**Payback**  $3 \text{ Satic units at } 488.00 \text{ installed per a/c}$   
 $488.00 / 624.00 = .78 \text{ years or } 9.5 \text{ months}$

These calculations were run without compressors running on the 7.5 ton RTU. During full load conditions, the savings dollars increase dramatically!

We welcome the opportunity to discuss this product and its possible applications in your business facilities. Please feel free to call me with any questions or should you want to schedule an appointment to discuss the SATIC Global Energy Saver.

Larry J. Anderson  
President  
Air Reliant Services LLC  
PO Box 53088  
Knoxville, TN 37950-3088  
landerson@airreliantservices.com