



“we ARE the standard”

21st Century Data Centers

Why such a proliferation of Data Centers?



In the days of the room-sized behemoths that were our early computers, a data center might have had one supercomputer. As equipment got smaller and cheaper, and data processing needs began to increase -- and they have increased exponentially -- we started networking multiple servers together to increase processing power. We connect them to communication networks so that people can access them, or the information on them, remotely. Large numbers of these clustered servers and related equipment can be housed in a room, an entire building or groups of buildings. Today's data center is likely to have thousands of very powerful and very small servers running 24/7.

sometime after Internet usage went mainstream. The data centers of some large companies are spaced all over the planet to serve the constant need for access to massive amounts of information.

As colocation and cloud computing continue to increase, the need for maximum uptime (99.999%) of the data becomes even more critical. In fact, a research group study estimated that power outages were related to costs of \$13.5 billion per year, with 50 percent due to power quality issues. That is why power quality should always be a key consideration for your operations.

Beyond the Servers and Storage Devices

In addition to the servers there are other significantly important pieces of equipment that are utilized and for which uptime is essential as well. Two of those are the environmental and the alternate power sources.

On the environmental side are the chillers and CRAC's (computer room air conditioning). The larger the data center the greater the need for stable temperatures. This can range from between 16° to 25° C. Once the temperatures go outside of those ranges, bad things can happen.

The alternate power sources (UPS and Motor generator sets) are integral to the smooth and uninterrupted supply of electricity to the data center. In the state of Texas alone, the average black out was greater than 40 minutes! The harmonious workings of the air conditioning and the UPS/generator equipment is step 1 in planning the electronic infrastructure of any data center.

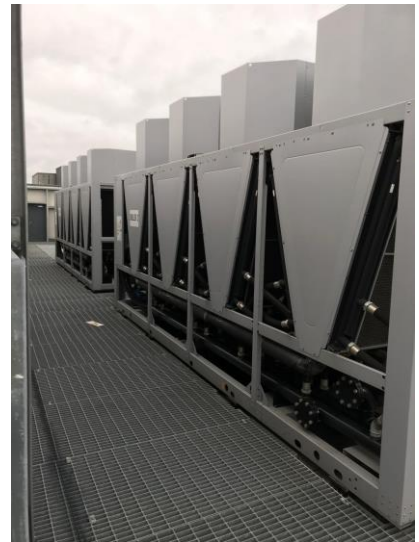
Is the Chiller/UPS/Generator adequate infrastructure?

The bigger question is, for what? Each of those areas of electronic infrastructure have an Achilles heel. They are all controlled by microprocessors – computer chips drive them just like they do the server farms for which they have been commissioned to protect and supply electricity and environmental balance. So where does that leave us? What more can we do?



4th Generation Technology

Capitalizing on the benefits of the latest Data center technology and all that it may offer requires a sure foundation. All UPS and CRAC equipment build in a simplified surge suppressor. This simple suppression technology is typically adequate to protect against a catastrophic event from lightning or a utility company issue. The challenges arise when strange occurrences begin to plague the equipment, and no one has an answer, since surge protection is “built-in”. The increasing digitalization of UPS’s and chillers require more just a single component device to preserve the proper operation of the intricate computer circuitry. In addition to that it is the fact that surges and transients occurring between hot and ground are typically given a “green light” to the connected loads. The presence of any surge protection on this mode is virtually nil. A first step is necessary.



SineTamer[®] is that first step.

This is not your common surge arrester. It is an engineered transient disturbance device that is designed to monitor all 360° of the sine wave. According to numerous studies, one of the predominant power quality issues involves loss of synchronization of processes and unexplained reboots or resets. Many of these events are triggered by false zero crossings of the sine wave, which the typical surge arrester can never prevent. There is

only one choice when faced with these issues. SineTamer[®] is that choice by thousands of clients in more than 45 countries around the world.

Improve your Bottom Line

At one of the high-profile newspaper publishers in Ecuador their UPS systems had been experiencing regular cases of downtime due to lost rectifier boards and other electronics. The costs amounted to around \$65,000 over the course of three years. Post installation of SineTamer[®] units the downtime over the next 14 months disappeared resulting in an ROI of approximately five months.

The MD of an Asia Pacific office of USA headquartered chiller company told me that Sinetamer[®] goes on the controls of every system they sell since he discovered the increased reliability and reduced warranty issues.



A multi-location site in the United Kingdom experienced spikes on the mains semi-regularly, causing the chillers to trip and they were of course not on the UPS. At one point a chiller tripped out resulting in a 1°C temperature rise in the data center and multi-million £ contract penalty! Post a trial run with Sinetamer[®] and confirmed multiple dips and transients, there were zero incidences of downtime in the ensuing six months. A plan to roll out to all existing data center locations is in process.

Sinetamer[®] is unparalleled in providing a true return on investment that averages less than 9 months in installations in more than 45 countries around the world. Sinetamer[®] is the global standard in surge protection! For more information get in touch with us or one of our distributors!

www.sinetamer.com Beyond the Standard!