How clean power can charge up the profitability of your ATMs

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Over the years, I have been asked many times why some ATMs, whether new or refurbished, seem to have constant service issues after installation.

Occasionally, the issue is simply a defective machine or defective part from the provider or OEM. But, most of the time, the real issue is related to power surges or fluctuations at the installation site.

Low-quality power can cause many different types of damage to an ATM, and it's a problem that is not always easy for a technician to identify in the field based on the symptoms the machine is exhibiting.

All types of computer systems are composed of microcircuits running on very low voltages. These circuits constantly compare very small changes in operating voltages, and power problems interfere with this process.

According to Powervar's website, there are three modes of system failure:

Destruction, degradation and disruption

Typically, destruction is very visible and is usually accompanied by burned or charred components and an immediate machine failure. This is not a common occurrence with ATMs, but it does occasionally happen.

> *“Low-quality power can cause many different types of damage to an ATM, and it's a problem that is not always easy for a technician to identify in the field based on the symptoms the machine is exhibiting.”*

Smaller power fluctuations do not cause outright failure. Instead, they degrade or weaken components over time. Usually, the damage is not visible and goes unnoticed until the component fails in the field.

Even then, it can be difficult to determine that unclean power was the problem. Often, the component simply gets replaced, and the degradation process begins all over again.

Disruption is probably the most common type of disturbance and it interferes with the system's ability to make proper logic decisions.

These issues are typically responsible for those "unexplained" failures that happen in the field. They can cause computer lock-ups, lost files, communication errors, "no fault found" service calls and sluggish systems.

Uninterrupted power supplies are not enough

While the U.S. power grid itself is quite stable, the move toward energy efficiency has pushed contractors and builders to replace old lighting with newer, more efficient components. These commonly require a ballast in order to start the process of turning the lights on.

The same is true for air conditioners, printers, servers and other devices. Every time a capacitor fires, it creates a spike on the negative power from the branch location or building. This creates a power draw and causes the power to fluctuate.

This corruption is generally seen on the ground inside of the circuit. While an uninterrupted power supply will fill in the drop from the initial spike, it does not remove the noise created at the grounding circuit.

Many uninterrupted power supplies claim to condition power, too. The fact is that most are simply surge protectors with a battery system to provide power in the event of an outage.

It takes specific electrical components to provide the level of protection needed by modern electronic systems. A good power conditioner cleans all the voltage to a tolerance of 0.1 percent or better before entering machine.

Real-world service problems

We have seen so many power issues over the years. In the Atlanta area, for example, we consistently see power fluctuations at the ATM of 100–140 volts, and sometimes up to 35 volts coming in on the ground line.

In other parts of the country we have seen fluctuations of 80–160 volts with up to 135-volt spikes coming in on the ground line.

USB devices, in general, are more susceptible to power fluctuations than some of the older hard-wired ATMs. This helps to explain why brand-new equipment sometimes suffers when installed in exactly the same location as the old unit.

> *“A correctly installed power conditioner can be an extremely inexpensive way to reduce ATM downtime. Studies by Powervar and other companies show that proper power conditioning can reduce service calls by as much as 35 percent.”*

These types of power fluctuations can wreak havoc on USB devices regardless of the manufacturer of the machine. Again, a high-quality power conditioner normalizes these fluctuations before they can affect the ATM.

There are several really good power conditioners out there, and it is always a good idea to add one at the time you install your new or refurbished ATM.

When you buy refurbished ATMs, your provider should be able to make specific recommendations for your installation and model.

It is imperative that you work with a quality provider who will coach you through this process and proactively follow up with your service team during and after installation.

A correctly installed power conditioner can be an extremely inexpensive way to reduce ATM downtime. Studies by Powervar and other companies show that proper power conditioning can reduce service calls by as much as 35 percent — making it a worthwhile consideration for your next install.

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*Marvin Bowers is vice president of global sales at **ACG**, a leading provider of ATMs, spare parts, security products and training.*