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New Technology Maintains 'Computer-Grade' Power

We all remember the massive power outage that hit the Northeast a couple of summers ago, and the ensuing chaos and confusion experienced in major urban areas during that extended loss of electricity.

From entire cities without power, to transportation back-ups, to restaurants and businesses losing food to spoiling, many were affected, with even simple things like clothes pickups and cash transactions at a drycleaner's shop being affected.

With each thunderstorm that hits the area, cleaners may wonder if another such period may occur this year, and some have taken precautions to be prepared for such an event.

When a drycleaner's cash register locks up, the money stops flowing. And the loss can go beyond missed orders, as any extensive effect on a point-of-sale (POS) systems may mean paying for a service call on the system. Of particular frustration are those cases where the call results in "no problem found."

To combat the instances of phantom problems and untraceable error codes, POS dealers and integrators are focusing on the most likely source: unstable line power. As a result, the increasing use of power conditioning units that filter "dirty" line power into "clean", computer-grade power is now enabling devices to avoid

temporal damage caused by frequent spikes or over-voltages.

The fact that new innovations have now brought the price of full-features power conditioning units down to that of simple surge protectors and UPSs means that dealers and integrators can cost-effectively reduce unnecessary service calls while increasing customer satisfaction.

"I've become a big believer in power conditioning," says Ken Golden, president of Turn-key Business Systems Inc. a Russellville, Ark., provider of sales, service, supplies and support for MICROS and Panasonic POS systems.

"Servicing POS requires more immediate action than servicing copiers, because that's how our customers get their money," notes Shana Ward, president and CEO of Tri-Valley Digital Imaging Inc. (a division of BMA Digital Ventures Inc.), a POS and document-imaging dealer in Brenham, Texas. "For example, when the cash register drawer doesn't open at a store because they had a power surge or whatever, then I could get a call late at night saying, 'Hey, get down here because we can't operate.'"

Upon arrival at a customer's site, a service tech can readily spot damage caused by a large power spike, such as a lightning strike. However, the insidious effects of power surges (less than 200 volts) are more difficult to pin-

point, yet often prove almost as devastating.

According to studies by well-known manufacturers and independent labs, 87% of power-related failures result from low-voltage surges that cause logic confusion that yields system errors and frozen screens.

Oftentimes, line-voltage problems are caused by poor wiring in old buildings, common as sites for drycleaners. Yet, even new buildings can suffer from the immediate effects of power surges and sags from line-voltage variations within the building, such as when an HVAC system cycles on and off or an elevator starts and stops. Even attempts to ensure a dedicated circuit cannot always guarantee computer-grade power to POS devices.

"We always talk to the electricians before we do a job, reminding them that nothing else can be on the POS circuit, and typically, they get it right," notes Turn-key's Golden. "But two or three years down the road, a new electrician comes in to add a neon sign or something else on the same circuit. Then all of a sudden you have support issues like 'blown programming.'"

Whatever the source, the effects of dirty power can quickly erode the bottom line of the newest POS systems.

"We span a 15-county area and have customers that are over two hours from us. To risk having to drive that far

to clean an error code caused by a voltage surge is absurd," adds Ward.

In the past, standard surge protectors and higher-priced power filters have been used to protect against, high-voltage spikes. However, they are not "intelligent" enough to handle the relatively small spike and over-voltages that momentarily disrupt POS devices.

At the other end of the spectrum, isolation transformers (ITs), a traditional choice by many old-timers in the POS business, have been available to help avoid power surges; however, they are prohibitively expensive for use on every POS device.

The other drawback of IT's stems from their unwieldy size and weight. The tight quarters encountered in POS installations have typically cramped the ability of installers to enlist them as a means to combat poor-quality line voltage.

In response to the shortcomings of previous attempts to cost-effectively combat dirty power, recent technological advancements in the field of power conditioning have now yielded devices that provide computer-grade power a clean, filtered power supply to the POS device at the same price

as limited-function surge protectors and expensive traditional filters and ITs.

Known as transformer-based filtering (TBF) devices, their protective feature set is such that some VARs have already recognized the benefits and started installing these new power conditioners, known by trade names such as "Smart Cord," on their POS systems.

"I had a customer's site that was having intermittent lock-ups and data loss every two weeks, and when I talked to some other dealers about this problem, they mentioned that SmartPower had a solution," recalls Smith of Carroll Business Systems. "I had one of my service technicians install their Smart Cord product on each POS device at the customer's site, and the system has not had a single lockup in the last three months."

Located in Houston, SmartPower Systems has traditionally been an innovator of high-performance power conditioning and UPS products for the mission critical market. But in 2002, SmartPower developed a new "smart" electronic circuit and patented the third generation of its TBF with

Smart Ground for digital technology that creates electronic power conditioners with more features such as prolonged over-voltage protection at a cost considerably less than that of an IT.

These TBF units stop massive spikes up to 6000 volts from passing through, but they also guard against the more common small spikes and surges. The circuitry constantly monitors the line power. If it goes too high, then it cuts the power off to the protected device.

TBF circuitry also addresses a particularly perplexing problem in many POS installations that of ground loop current. While most electricians intentionally link earth-grounds for safety's sake, it can create a voltage differential between the two separate groundings. The resultant current can create havoc in sensitive microprocessors embedded with POS devices.

For more information on electronic power conditioning, contact SmartPower Systems Inc. at 1760 Stebbins drive, Houston, Texas 77043; (713) 464-8000; fax: (713) 984-0841; or www.smartpowersystems.com.

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