



# THE BENEFITS OF SURGE PROTECTION for Security Systems

## Introduction: Power surges are not an uncommon event

### How often is your business subjected to a power surge?

Because power surges normally happen so quickly, and have so few visible clues, most of them pass without being noticed. The truth is that your business might be subjected to dozens, or even hundreds of power surges each day, depending on a range of factors.

One of the most well-recognized sources of power surges is lightning. Lightning strikes can cause dramatic power surges on power lines, but also on telephone, cable TV, and other wires that enter our buildings. Moreover, lightning strikes are so powerful that their effects can be felt not only over great distances on the affected lines, but also in adjacent areas not directly connected to the wires that were hit. So the question about lightning strikes isn't how often you receive a direct lightning strike, but how often does lightning strike within 25, 50, or 100 miles of your location?

However, according to the Insurance Institute for Business and Home Safety, lightning strikes account for just two percent of all surge damage. That means that 98 percent of the damage is done by the hundreds of power surges that are mostly unnoticed every day.

Where are these surges coming from? Many people think that power surges only come from lightning, or during

extreme weather, because that is when they most often notice flickering lights and other signs of power disruptions. The truth is that surges can be the result of something as simple as your air conditioner cycling on or off. They could be caused by something much further away – for example, when electrical power plants are connected or disconnected from the grid, which happens frequently as power needs change during the course of a day.

Some experts estimate that between 60 and 80 percent of all power surges are caused by events or problems within the same building as the electronic systems they are affecting. These experts point out that within commercial buildings, there are usually many devices with powerful motors that switch on and off during a day, including elevators, air conditioners, refrigerators, pumps, and similar equipment.

In any event, no matter what the source, whether they are internal or external factors, power surges are not rare. And these power surges can cause tangible damages to an organization by affecting electronic systems that make up the core of security systems, including surveillance, access control, fire safety, and others.





## Power surges are a threat to Security Operations

Power surges can directly affect the operation of security systems in at least three ways:

1. They can cause equipment failure
2. They can cause a loss of data
3. They can cause system downtime

When most people think of damage from power surges, they often imagine the most dramatic form of damage – equipment failure. There is no doubt that a significant surge can indeed cause immediate and total equipment failure, and this can be a significant risk for security systems. When systems stop functioning, surveillance, access control and other functions stop. During busy times of the day, this can throw parts of the organization from the front lobby to employee entrances into chaos, and in some scenarios puts employees and visitors at increased risk of injury, property loss or worse. In some facilities such as casinos or correctional facilities, it can force a complete lockdown or shutdown of operations. Protecting against dramatic equipment failure is the first and primary function of surge protection systems, and should be considered for the power supply of every essential piece of security equipment.

While an immediate total equipment failure is always a concern, and a significant business risk, it is not the most common occurrence. What is far more common is a long string of smaller power surges, each causing a bit of damage that will add up over time to shorten the life of electronic equipment and decrease the reliability of operation. Unprotected organizations can and should expect that failure of elements of the security systems will occur in a more frequent and less predictable fashion due to the ongoing presence of these smaller surges. If a failing piece of equipment is a critical one, then the effect could be similar to the system shutdown scenarios described above. If the failing equipment is a more isolated one, then the effect could be limited or more serious. For example, it might be that a small, local failure of surveillance or access control could cause one door to become unusable, or to lose a portion of surveillance visibility. A more serious failure could cause large portions of the recorded surveillance footage to be lost without anyone realizing it was happening. Protecting against the effects of repeated smaller surges is another important function of surge protection systems.

While equipment damage can stop a security system from functioning, a loss of critical data can also bring a system to a halt, and can be time consuming and costly to restore. Security systems require a large number of customized data files, including not only information about identities and their associated permissions, passwords, and security questions, but also policy-driven data, such as operational and emergency procedures, as well as current status data including who is presently on the premises. Without these custom data files, the access control system would not know who to let in, even if the equipment was functioning. Backup copies of the data could be used to restore the systems if they were current and available, but recreating the data would be the worst-case scenario for most installations. Protecting the data storage devices with surge protection gives these critical files a better chance of surviving common power surges without corruption or damage.

Any equipment failure or loss of critical data will cause downtime for a security system. Even if a capital investment is made in replacement equipment simply to keep on site as a backup, getting the right technicians on site to make the repairs could take a day or two at least; if the equipment is not on site, the downtime could easily extend to



a week or more. And while a security system is down, it is not fulfilling its business function –putting staff, visitors, customers, assets and the business itself at increased risk. From a business perspective, the potential loss from security system downtime could be far more costly than the cost of the damaged equipment itself. Alarm systems protect the company from theft and break-ins, fire damage, loss of property, criminal incidents, and liability from a full range of potential hazards. While no surge protection system can completely eliminate all these risks, the low costs of high-end protection devices should be recognized by every business manager as a basic necessity.

## Power surges are also a threat to Security Budgets

Every business decision must account for budgets and costs. It is true that surge protection devices are a cost item; they are similar to insurance in that they are a risk and loss management device. However, if left unchecked, power surges cause much greater cost in the security budget, including not only equipment repair and replacement, but also the potential costs of troubleshooting and restoring the system to full functionality including the possibility of recreating the necessary data and system settings.

It is difficult to predict the potential costs of equipment damage or to quantify just how long equipment life could be extended by providing surge protection. These factors strongly depend on the quality and robustness of the installed equipment design and manufacture, as well as the power quality at the location itself. There are ways to evaluate the power quality at a particular location, such as attaching a sensitive power meter and letting it record how often the supplied voltage exceeds the nominal value. While this is much more than most customers do, unknowns still remain, and the situation could change over time. Without proper protection, power surges will remain a threat to both security budgets and security operations.



## Surge protection protects business operations and profitability

Each year, billions of dollars in revenue are lost due to theft, property damage, false injury claims, and other events. In many cases, the organization’s video surveillance system is the only eyewitness to these occurrences, and so recorded surveillance footage is a valuable tool to mitigate or eliminate these business risks. Data from other systems including access control and fire safety are also vital to follow-up and remediation after an incident.

Implementing surge protection for every critical element of the security system is a relatively low cost approach to mitigating this type of risk. Protecting these systems from damage and

downtime provides operational benefits and decreases the likelihood of budget-busting unexpected costs.

## Summary

Perhaps the best approach is to think like an insurance provider, and look at the potential cost of equipment, surveillance, or access control failure. Compare that potential risk and loss to the costs of basic and enhanced surge protection for the essential security systems.

Most organizations can envision potential security downsides easily – quite likely, that is the reason the security systems were installed in the first place. What is needed is to put a value on a “security system for your security system” – the surge protection system that will help ensure that every important element of your security system remains undamaged and operational.

For every type of organization, including large and small businesses, non-profits, infrastructure, and educational institutions, among many more, the additional cost of surge protection for essential security systems will pay off handsomely in terms of equipment life and overall system reliability, protecting staff, visitors, customers and budgets for the long term.

