ARTICLE

Power surges

AXIS COMMUNICATIONS

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Introduction

Power surges can destroy electronic equipment in mere microseconds unless proper protection is established. This web article will go through what these surges are, what they can do and how you can benefit from the built-in capabilities of Axis cameras.

1. What is a power surge?

A power surge is a transient voltage spike in a power or data line. The most familiar cause is lightning strikes, but it is actually just one of several common reasons.

More frequent causes include the switching on and off of high-powered machinery such as elevator motors or air conditioners. The resulting changes in magnetic or electrical fields around these high-power lines can lead to voltage transients in surrounding cabling.

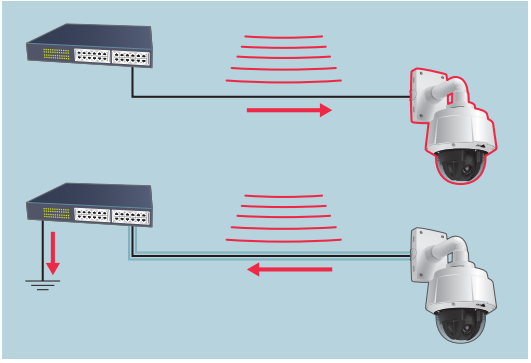
Surges can also occur as a result of faulty equipment or downed power lines. In today's complex power distribution system, this kind of event should be considered inevitable.

Electronic equipment is constantly shrinking in scale, and modern, delicate components are increasingly sensitive to excessive variations in current and voltage. If a sufficiently powerful transient enters the equipment, it may become irrevocably damaged and even catch on fire.

2. Protection

Axis cameras are designed to resist voltage transients to a certain degree. This design depends on proper installation.

The network cable connecting the camera to a switch may pick up strong magnetic and electrical fields in its immediate proximity. This could lead to voltage transients propagating along the cable. Through the use of a **shielded network cable (STP)**, the electric energy is trapped by the shield instead, and can be diverted to ground without ever reaching the camera. This requires that the shield has an unbroken path to ground through the Power Sourcing Equipment (a Power over Ethernet switch or a midspan).



For this to work, it is imperative that the **PSE is properly grounded**. An Axis PoE midspan should **always be connected to a grounded socket** for the shield to function properly.

However, a desktop switch like the one shown in the image above may lack a ground connection through the power line; therefore, the switch **needs to be grounded separately**.

Consider the entire cable path when performing the installation. If you are connecting several network cables together to reach the camera, make sure each cable and all patch panels and couplings are shielded.

3. Summary

Power surges are an inherent part of the electrical distribution system, and may damage equipment if not handled properly. When installing Axis cameras, **use shielded network cables (STP)** throughout, and to benefit from the surge-resistant design of the cameras, make sure your switches or midspans are **properly grounded**. Avoid running network cables parallel to power lines if possible.

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About Axis Communications

As the market leader in network video, Axis is leading the way to a safer, smarter, more secure world – driving the shift from analog to digital video surveillance. Offering network video solutions for professional installations, Axis' products and solutions are based on an innovative, open technology platform.

Axis has more than 1,400 dedicated employees in 40 locations around the world and cooperates with partners covering 179 countries. Founded in 1984, Axis is a Sweden-based IT company listed on NASDAQ OMX Stockholm under the ticker AXIS. For more information about Axis, please visit our website www.axis.com.

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