

## What is a TVSS?

Transient Voltage Surge Suppressor (TVSS) is a device that every data center or mission critical facility should have. Why should every data center have one and what does it do you ask? The purpose of a TVSS is to eliminate or reduce damage to data processing equipment and other critical equipment by limiting transient (surge) voltages and currents (surges) on electrical circuits. These transients or surges may come from inside a facility, or may be injected into a facility from the outside.

What is a transient? A transient surge is a short blast or pulse of high energy that can either come in its natural form such as lightning or produced by other equipment. Transients caused by other equipment are usually caused by the discharge of stored energy in inductive and capacitive components. Some examples are Electric motors, such as those used in elevators, heating, air conditioning, refrigeration or other inductive loads. Two other sources are arc welders and furnace igniters. These transients are capable of causing significant damage to equipment and electronics.

The transient causes damage to a device when the transient voltage exceeds the weakest exposed component's ability to withstand that voltage. Transients normally flow into equipment via electrical conductors, but other paths are common. These paths include: telephone lines, data-com lines, measurement and control lines, DC power buses and neutral and ground lines.

To protect against these surges designers recommend the installation of a TVSS devices that connects to all points of potential voltage threat and limit this voltage to a level below the equipment "withstand" voltage. The TVSS device absorbs or diverts all the energy present in the surge and clamping or holding the "let through" over voltage down to a level safe for exposed circuitry.

TVSS protection is typically applied at several points throughout a facility. These locations include the service entrance point, distribution panels, branch panels and the individual circuit.

As you can see a TVSS device is important to a mission critical electrical system and its benefits are great. A TVSS is a low cost protection device that will help to reduce downtime or production losses. It helps to extend lighting lamp and ballast life expectancy. The TVSS will help in reducing motor stress and overheating and is a constant protection of data processing and digital equipment.

If your mission critical facility does not already have TVSS devices installed we highly recommend it. If you are not sure if your system has them installed we suggest asking your engineer or electrician to verify. It is a small price for additional peace of mind.