TECH NOTE

Protection for Networks

Ever wonder why Zero Surge does not sell a product to protect data lines for networks? The answer has to do with the nature of what a wired network is and what a surge is. Surges occur on alternating current (AC) power lines. They are basically a high frequency noise that rides the wave of power in a building. Networks do not communicate via AC power. They use direct current (DC). This low voltage DC power does not oscillate at 60 Hertz like AC power, so interrupting power does not create a ripple in the way a surge forms in AC power. So why do other companies make network cable protection?

Traditional surge protection uses a shunt mode component, normally a metal oxide varistor (MOV), which opens a path to the ground line when the voltage of a surge reaches the component's voltage protection rating. The surge energy travels down the ground line to the earth ground connection at the service entrance of the building. Networks need a ground in order to create the low voltage signals they send. The network equipment assumes that the ground line is the zero point of voltage as it is the lowest potential. The network ground and the power ground lines are tied together in a building (or the potential difference would be shock hazard!). If there is surge energy passing through the ground line, the zero point is now raised to whatever the voltage of the surge energy is as it passes through. This can cause two problems - (1) the data will be corrupted which slows down your network and (2) if the energy is high enough, it can cause physical damage to the data ports on network switches, routers, modems, and devices like printers and cable TV boxes.

This explains why traditional surge protectors offer network and cable line protection. They are protecting your network from their own products! With Zero Surge protection, the ground line is kept free of surge energy. Our series mode filters work within the line and neutral to filter out the high frequency noise that is the surge and safely sends it back out to the power company along the neutral line.

Using Zero Surge means no need to add extra protection for network data lines.