

## Application Note

### **Subject: DLPS SURGE PROTECTORS VERSUS A GROUND BLOCK**

The ground block, installed on the drop line, is intended to only be a safety device. The National Electrical Code recommends, "The metallic sheath of communications cables entering buildings shall be grounded as close as practicable to the point of entrance." In the event an electrical wire was to drop across the coaxial cable, and the insulation failed, the ground block would provide a path to ground.

The only protection the ground block provides to the center conductor is a way to ground the center conductor if the cable's dielectric fails.

Lightning generates a very strong electromagnetic wave that passes through the sheath and produces a voltage on the center conductor, which may damage traps and subscriber's equipment. The ground block does not provide any protection from voltage that is induced on the center conductor through the sheath of the cable.

The only way to protect subscriber electronics is to eliminate overvoltages on the center conductor. Only a surge suppression device can do this.

The DLPS is an overvoltage suppressor that takes an overvoltage off the center conductor and sends it to ground in a very short time. It can handle a peak pulse current of 500 Amps in a time frame of  $2 \times 10$  microseconds. Once the surge is blocked the unit will reset without degrading. The Sidactor technology used in the DLPS will not degrade due to repeated hits; this is a major improvement over the gas tube, which is used in many other drop line surge protectors.

The DLPS units have a fusible link that is required by the National Electrical Code, section 830-30 and is UL approved. They also meet the requirements for a ground block. The DLPS has good RF performances with typical insertion loss of less than 0.3 dB and typical return loss of 25 dB or greater. The DLPS does not affect the RF signal during suppression, so no bit error rate problems occur on a digital signal.

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