



Reliability In Surge Protection Since 1937

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Grounding Tips

A protection system with a poor ground is the same as having no protection at all. Too many times proper grounding has been overlooked. Recommended grounds are the utility company ground, a ground rod, well casings, and cold water pipes that are of continuous metal. A note of caution, sometimes the metal-cold water pipes are repaired and/or extended PVC piping. The introduction of PVC material renders the cold water pipe ground unacceptable. A thorough investigation of a cold water pipe ground is important since the PVC repairs or extensions may be covered by drywall.

Grounds that are unacceptable include sprinkler pipes, PVC pipe, conduit, buried wire and any ground that cannot be verified.

Bonding ensures the most effective ground. Bonding ties all of the grounds in the building together electrically. If there is a rise in ground potential and all of the grounds are bonded, no damage will occur since it is differential voltage that causes problems.

It is absolutely necessary to make sure that the ground used for the AC power is the same as the ground used for the data-line surge protectors. A common ground reference must be achieved for all equipment. All ground wires must be as short as possible and it is imperative that the ground wire not be coiled nor looped. The ground wire must be as straight as possible, remember that it must be the path of least resistance. Regarding the diameter of the ground wire, the larger the better. The larger the diameter, the better electrical conductivity. Finally, the earth ground resistance on which the whole grounding system relies, must be less than 5 ohms.

Lines that typically need protection include incoming central office trunks, lines to off-premise sites, local area networks and campus environments with multiple buildings. A good rule of thumb to remember is that all lines entering or exiting a building need protection. Both ends of the cables between buildings must be protected!