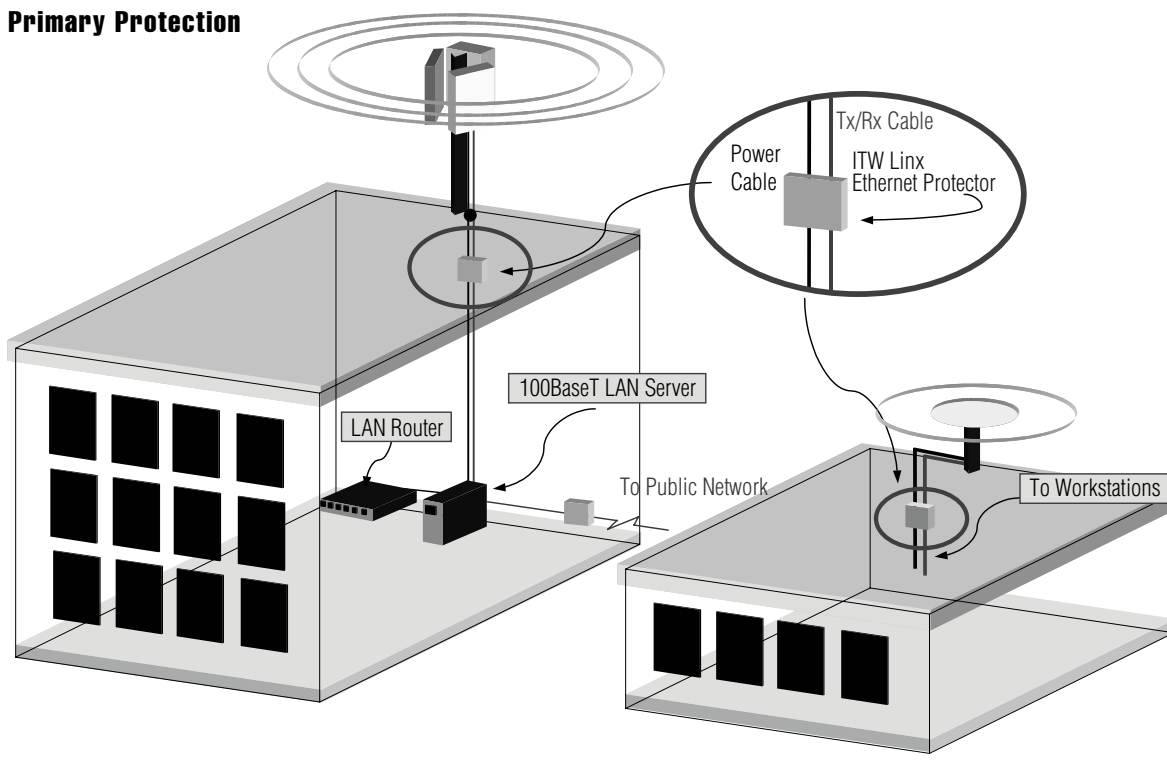


WIRELESS ETHERNET PROTECTION

Wireless Ethernet Protection Installation per EIA / TIA 568A & 758 Multiple Building Installation

Primary Protection



Building Entrance Protection for Wireless Ethernet, MMDS, LMDS Network Applications.

The explosion of technology surrounding data networks and electronic hardware for wireless communications has created new challenges for surge protection. The protection device must provide fast, reliable surge protection while remaining transparent to network performance. ITW Linx has addressed this problem with a new series of protection devices designed to specifically protect buildings, occupants, and equipment while remaining transparent to data transmissions. Surge protection is a critical (and often overlooked) component of network reliability. Let's follow the progression of the Linx solution through the applicable standards for the industry and relate it to wireless ethernet applications.

The National Electric Code Article 800 requires the use of an Agency Listed (UL/CSA) Building Entrance Protector for all power and communications cables entering a building. The NEC intends by Article 800 to protect the building and occupants from fires caused by transient voltage and current surges. It also requires that the protector be certified by an independent agency like Underwriter's Laboratories for the ability to handle high energy surges like lightning and power crosses. UL497 is the key standard established to ensure the device protects safely under the most extreme surge conditions. Use of non-listed protectors is prohibited by the NEC and is unwise, since they may not be safe in extreme surge events. Protectors complying with Article 800 may indeed protect a building and its occupants, but what about the connected sensitive electronic equipment used in wireless ethernet applications?

Most large wireless ethernet applications like LMDS and MMDS will make use of a transmission tower for broadcasting a signal to a number of receivers. In the case of ethernet, each tower will act as both a transmitter and receiver. Typically, the installation will connect the transmission device at the top of the tower to the LAN server in the building nearby via a cable. The cable may contain power pairs with the data twisted pairs and be a single cable or multiple cables. The unfortunate aspect of this system is that the LAN equipment operator has erected a fairly large lightning rod (antenna) which is directly connected to the LAN server via a very conductive cable. Furthermore, the server in the installation isn't particularly happy about variations in voltage of more than a few volts.

If we look at the types of protectors available for building entrance protection, there are two main types: Gas-tube and Solid-State. Gas-tubes are good at protecting buildings, wiring and occupants, but are not so good at protecting sensitive electronic equipment. The reason gas tube devices are not optimum for applications like wireless ethernet is that gas tube devices are too slow to react to the surge event to prevent it from reaching the equipment it is intended to protect. As a rough calculation of surge speed, we can approximate that a surge will travel at near the speed of light through a cable. Within a second (a nanosecond) after a surge is introduced into the cable the surge will travel up to one foot down the cable. Gas tube devices require 4,000-5,000 nanoseconds to build up the energy to divert the surge to ground. If the gas tube takes 4,000-5,000 ns, the surge will travel up to 4,000-5,000 ft, past the protector before it acts to protect. In most wireless ethernet applications, the distance from the tower to the server is only a few hundred feet. Obviously, gas tube devices are not the optimal choice here. Solid-state devices, however, can protect the equipment in time.

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Solid-state protection devices are designed to react in 2-5 nanoseconds. Recalling our previous calculation, for each nanosecond that passes, the surge travels one foot down the cable, we can see that the solid-state device will clamp the surge to ground within 2-5 feet of the protector. Thus, the network equipment never sees this energy and the network administrator sleeps at night. ITW Linx protection products use 100% Solid-state protection to ensure your equipment doesn't see the intense energy of a lightning surge. But wait - there's more! Solid-state surge protection solves the surge speed problem but what about the effects of introducing additional electronic components in the network. If you aren't careful, a protection device that is not designed for high speed networks such as: xDSL, ISDN, T-1, 10BaseT, 100BaseT and even 1000BaseT, will introduce errors in the transmission and cost network efficiency and performance.

With the advent of these new network speeds, Linx became aware of the need to develop a protection device that remains transparent to the network while it guards against surges. Our first high-speed data protectors were available in the early 1990's, but today's 10/100/1000BaseT networks require a new level of protection technology. Linx has the solution. Our series of Category 5e Surge Protectors provide the nanosecond response to surges while maintaining transparency to the data transmission. These devices meet the TIA758 for Category 5e and have been tested by three independent laboratories to ensure their performance in network applications.

The ITW Linx series of Category 5e Building Entrance Protectors are the right choice for your application. They are designed to provide nanosecond response to surges in Solid-state Technology. They meet UL497(Primary Protection) requirements for Building Entrance Protection. And they use patented Cat5e Circuit Card Technology to ensure transparent protection performance in 10/100/1000BaseT networks. Contact ITW Linx for more information on Wireless Ethernet Protection Products.

Products:

CAT5-LAN: 4 Pair, Solid-State, Cat5e Building Entrance Protector. 110 Punch-down input/output connections. 16V Clamping voltage - other voltages are available.

ML25-CAT5-LAN: 25 Pair, Solid-State, Cat5e Building Entrance Protector. 110 Punch-down input/output connections. Each pair is serviceable. 16V Clamping Voltage - Other voltages available.

OEM Versions: Linx designs and manufactures protection products for your needs. Versions of our Cat5e Protectors are available with data protection and power protection at specific clamping voltages to meet your application's requirements.

Features:

- UL Listed for Primary (497) and Isolated Loop (497B) Applications. UL Listing is critical for ensuring safety and performance of protection devices.
- Meets and Exceeds EIA/TIA Standards 568 and 758 for Category 5e performance. The TIA 758 standard requires use of a UL Listed Building Entrance Protector per UL497 in Cat5e Campus / Outside Plant applications.
- Solid-state protection provides the fastest response to transient voltages (2-5 nanoseconds) by quickly diverting damaging surges to ground.
- Solid-state protection automatically resets without user intervention.

