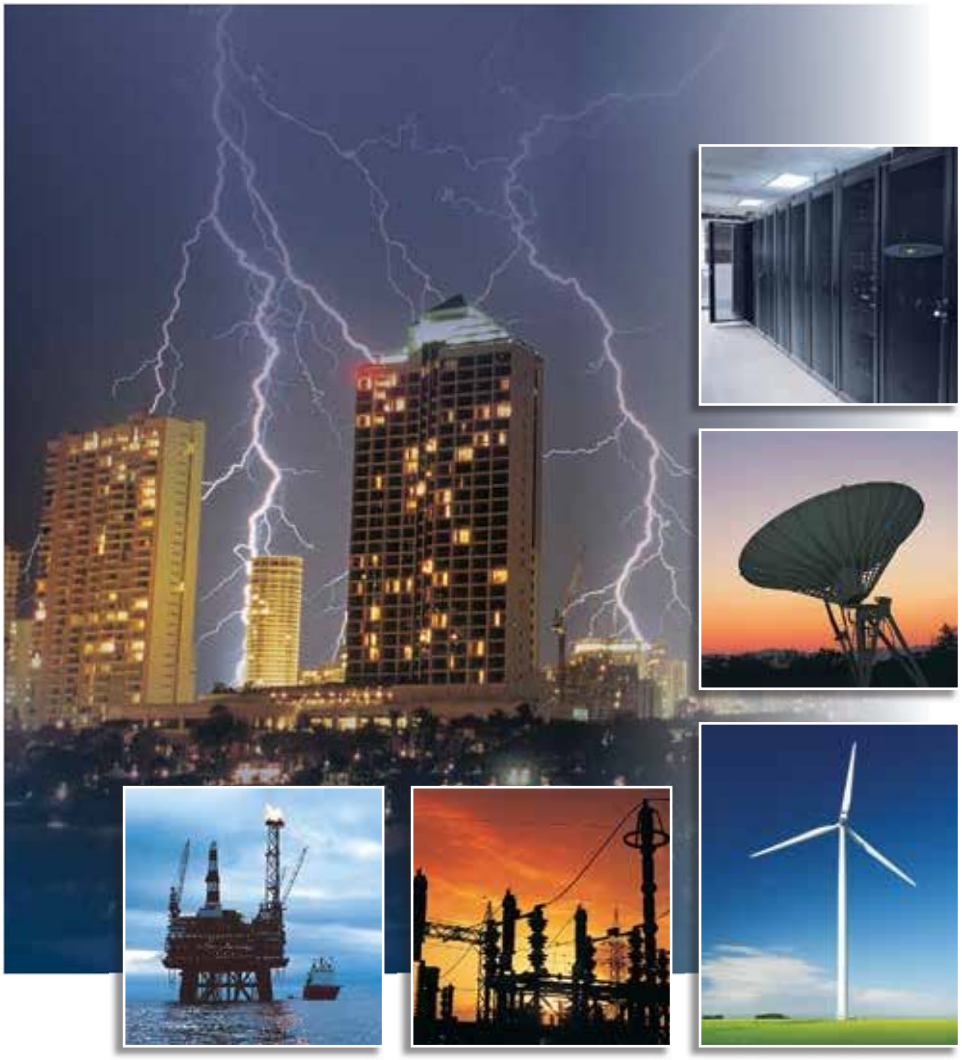
PENTAIR

FACILITY ELECTRICAL PROTECTION FOR THE 21ST CENTURY



ERICO

Facility Electrical Protection for the 21st Century

Lightning strikes and the dangerous over-voltage surges caused by lightning and man-made events represent a direct threat to people, buildings and sensitive electronic equipment.

Today, the consequences of an unexpected lightning strike or power surge can be catastrophic for a company. Proper protection can save thousands of dollars in damage, operational downtime and lost business opportunities.

Total Facility Protection

The consequences of an unexpected lightning strike or power surge can be catastrophic for a facility:

- Personnel are at risk.
- Critical equipment may be damaged or destroyed.
- Data can be corrupted.
- The costs of operational downtime and lost revenue can be very substantial.

As industries become more dependent on increasingly sensitive equipment, proper protection from lightning and dangerous over-voltage transients is necessary.

With over 60 years of research, testing and product development, Pentair has acknowledged that no single technology can totally eliminate vulnerability to lightning and surges.

The Pentair Six Point Plan of Protection is designed to provide total facility protection by integrating several concepts.

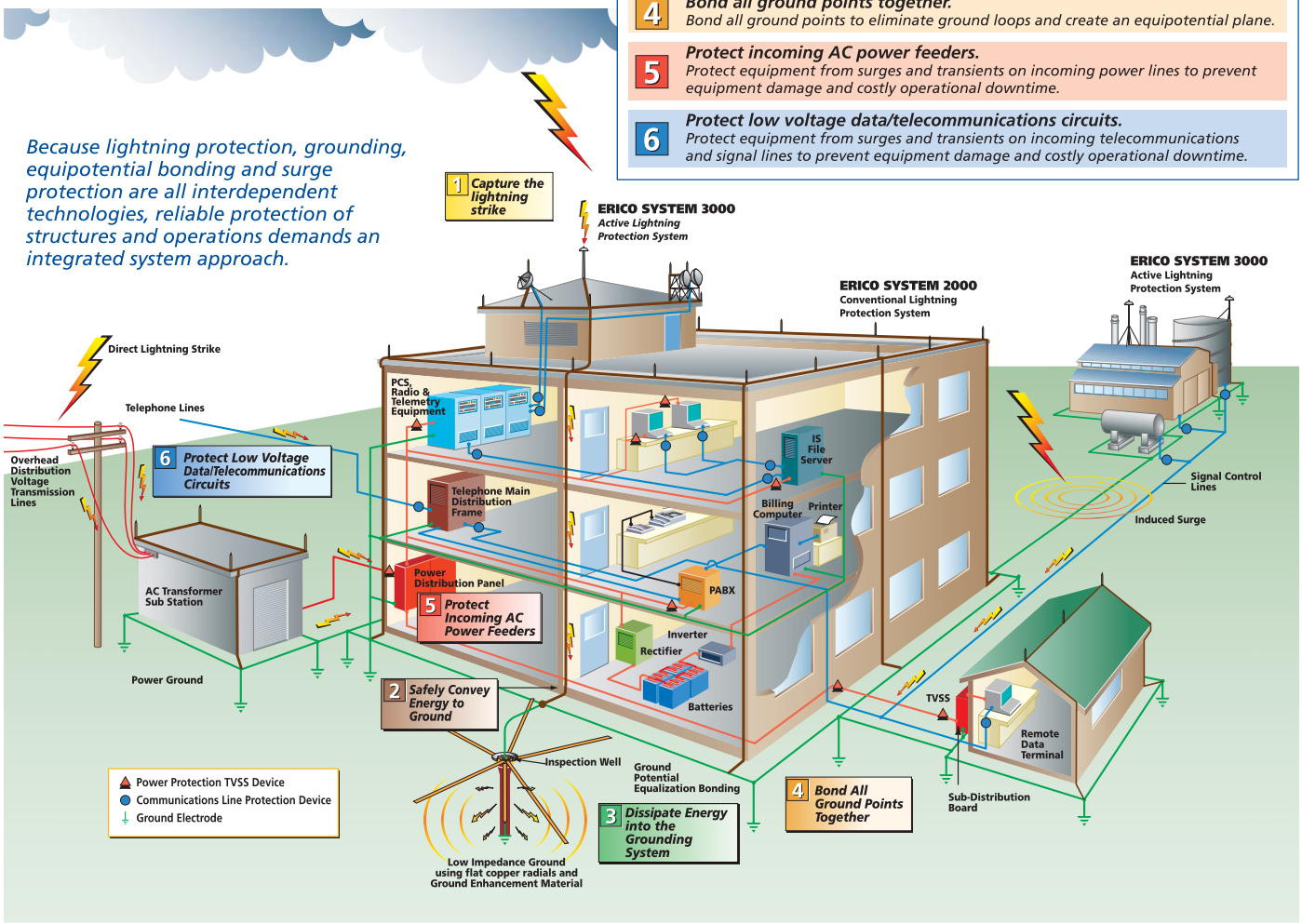
The Six Point Plan will minimize the risk of damage to facilities through:

- Direct Strike Protection
- Grounding and Bonding
- Surge and Over-voltage Transient Protection

The Six Point Plan of Protection from Pentair

1. ***Capture the lightning strike.***
   Capture the lightning strike to a known and preferred attachment point using a purpose-designed air terminal system.
2. ***Convey this energy to ground.***
   Conduct the energy to the ground via a purpose-designed downconductor.
3. ***Dissipate energy into the grounding system.***
   Dissipate energy into a low impedance grounding system.
4. ***Bond all ground points together.***
   Bond all ground points to eliminate ground loops and create an equipotential plane.
5. ***Protect incoming AC power feeders.***
   Protect equipment from surges and transients on incoming power lines to prevent equipment damage and costly operational downtime.
6. ***Protect low voltage data/telecommunications circuits.***
   Protect equipment from surges and transients on incoming telecommunications and signal lines to prevent equipment damage and costly operational downtime.

Because lightning protection, grounding, equipotential bonding and surge protection are all interdependent technologies, reliable protection of structures and operations demands an integrated system approach.



Pentair Engineered Electrical & Fastening Solutions is a leading global manufacturer and marketer of superior engineered products for niche electrical, mechanical and concrete applications. These Pentair products are sold globally under a variety of market-leading brands including ERICO, CADDY, ERIFLEX and LENTON.

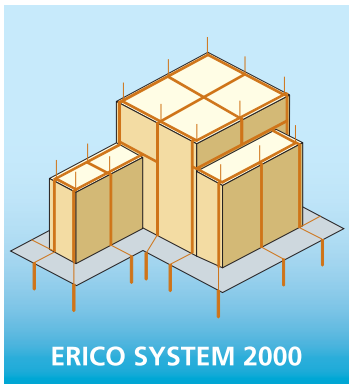
For more information on ERICO, CADDY, ERIFLEX and LENTON, please visit erico.pentair.com.

Direct Strike Protection

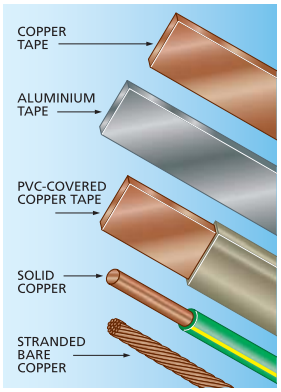
Pentair's innovative technology provides two systems for capturing lightning energy. The ERICO SYSTEM 2000 provides conventional air terminal technology to meet traditional needs.

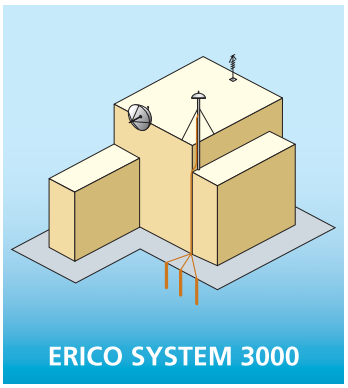
An alternative approach to lightning protection is the ERICO SYSTEM 3000, which utilizes the collection volume principle to determine the effective placement of lightning protection to ensure the safe conveyance and dissipation of the lightning energy into the ground.

Over 7000 facilities, including some of the tallest and most vulnerable buildings in the world, are protected by ERICO SYSTEM 3000 from Pentair.

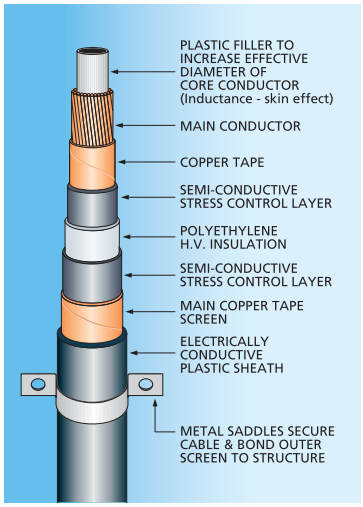


- Well known technology of passive rods or air terminals, familiar to installers
- Air terminals available in aluminum, copper and stainless
- IEC®, B.S., and U.S. Standard Compliant
- Precision manufacturing helps ensure easy assembly and installation
- Computer-aided design to IEC62305, NFPA®-780, AS/NZS1768





- Advanced lightning protection system based on latest lightning research and technology
- Enhanced area of protection, fewer air terminals needed
- Economical and easy to install
- Fewer downconductors are required
- Designed to protect all types of structures and "open areas"
- Computer-aided design using Collection Volume method

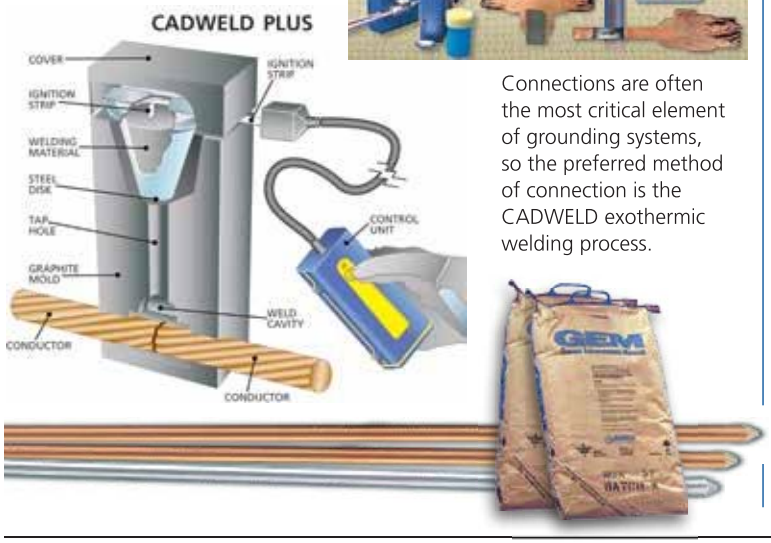


Grounding and Bonding

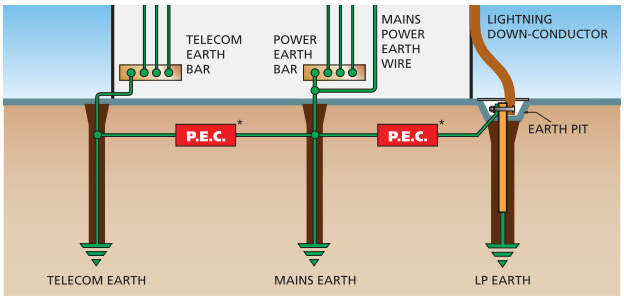
For the efficient performance of a lightning protection system, it is essential that a low impedance ground be provided to facilitate the dissipation of the lightning energy into the earth mass.

Because soil conditions and seasonal patterns vary from site to site, the methods of grounding need to be considered on an individual basis.

As a grounding specialist, Pentair provides a range of grounding systems to suit any application.

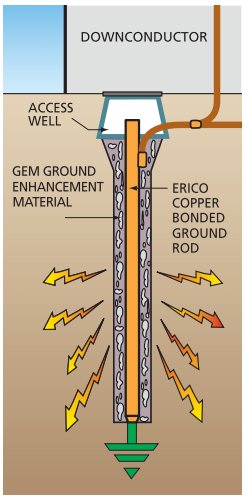


Connections are often the most critical element of grounding systems, so the preferred method of connection is the CADWELD exothermic welding process.



Pentair offers a variety of products, such as ground bars, signal reference grids, ground plates and potential equalization clamps, which are designed to create an equipotential plane and help protect personnel and valuable equipment.

ERICO copper-bonded or stainless steel earth rods and GEM facilitate the transfer of surges and fault currents into the earth, and provide a very long service life due to superior construction and quality.



Facility Electrical Protection for the 21st Century

Power Protection

Modern electronics and circuitry used in computing, communications and control/alarm installations are highly susceptible to damage from lightning surges and other transient over-voltages. Pentair specializes in providing protection at two points:

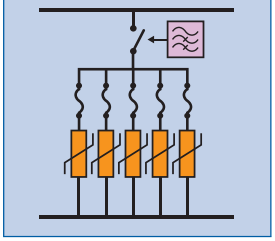
- At the point of entry of power lines to buildings, high energy shunt diverters rapidly limit surges into the facility, directing the excess surge energy to ground.
- At secondary locations, provide various levels of protection from surges on power lines.

As a protection solutions provider, Pentair also offers protection systems and consultancy services to suit specific industry applications ranging from power conversion for the telecommunications industry to plug-in power line filters for the home/small office environment.

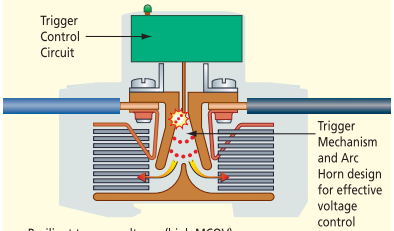
- For sensitive electronic equipment protection, or when high performance protection is required, Surge Reduction Filters (SRF's) are recommended. They reduce the peak residual voltage to suitably low levels and dramatically reduce the rate of current and voltage rise to downstream equipment.

The SRF product family incorporates suitably designed low pass filter technologies coordinated with shunt diversion stages incorporating both Transient Discriminating (TD) and Triggered Spark Gap (TSG) technologies. The coordination of each of the above technologies within one package provides the ultimate hybrid technology performance. This results in a robust surge rating and extremely low residual voltages with a high Maximum Continuous Operating Voltage (MCOV), designed to withstand sustained over-voltage conditions.

Active TD Technology

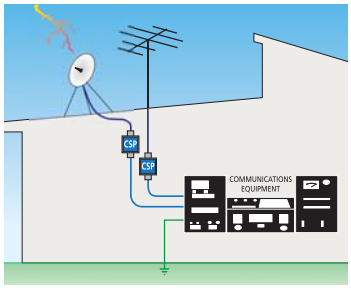


Triggered Spark Gap



- Resilient to over-voltages (high MCOV)
- Efficient energy diversion
- Robust high energy surge performance

Telecommunications and Data Protection



With the increased use of sensitive electronics in telecommunications, signal and data management, effective surge clamping is essential to prevent data corruption, component damage, operational downtime, loss of revenue, customer dissatisfaction and risk to human safety.

Pentair facility electrical protection products are designed to provide comprehensive protection against surges of up to 20kA on telephone subscriber lines, industrial process control lines, coaxial feeders, computer networks and serial data circuits.

Subscriber/Data Line Protection

Universal Transient Barrier

Line Surge Protection

Local Area Network Protection

Computer/Data Equipment Protection

Coaxial Surge Protection