nVent | ERICO

We connect and protect

Lightning Protection Solutions

Protection Solutions from the Ground Up



nVent.com/ERICO

LIGHTNING ACCOUNTS FOR

MORE THAN

ONE BILLION DOLLARS

ANNUALLY

IN STRUCTURAL DAMAGE TO BUILDINGS IN THE U.S.

– UL

LIGHTNING OFTEN STRIKES

THE SAME PLACE REPEATEDLY

IF IT IS A TALL, ISOLATED OBJECT

– National Oceanic and Atmospheric Administration (NOAA)

LIGHTNING IS THE

MOST DANGEROUS + FREQUENTLY ENCOUNTERED

WEATHER HAZARD

THAT MOST PEOPLE EXPERIENCE *EACH YEAR*

– National Severe Storm Laboratory



ARE YOU AT RISK?

THE PROBLEM

While lightning itself cannot practically be prevented, a lightning protection system is intended to control the passage of a discharge in such a manner that minimizes personal injury, property damage or system disruption. In a world of increasingly complex and sophisticated buildings and equipment, lightning is a constant risk. A single direct strike can result in physical damage to buildings and catastrophic failure of electrical equipment. It can start fires, cause major breakdowns to electrical, communications and utility installations and simultaneously cause substantial loss of revenue.

Achieving an adequate level of protection results in prevention of costly downtime. Proper protection of structures, operations and personnel demands a systematic and comprehensive approach. A lightning protection system or expensive surge protective device (SPD) will not function properly without a good grounding system. A low-impedance grounding system may create hazards to personnel and equipment without proper bonding. These interdependent disciplines are best applied when considering a total facility, rather than an individual portion.

What We Do

Risk must be assessed in the early stages of structure design to select the level of protection and methodology best suited for each application. **Having more than one option in lightning protection methodology, technology and design helps overcome common obstacles to lightning protection system installation such as:**



GEOGRAPHICAL LOCATION + LIGHTNING DENSITY



ARCHITECTURAL CONSIDERATIONS



HISTORICAL SIGNIFICANCE



CRITICAL EQUIPMENT



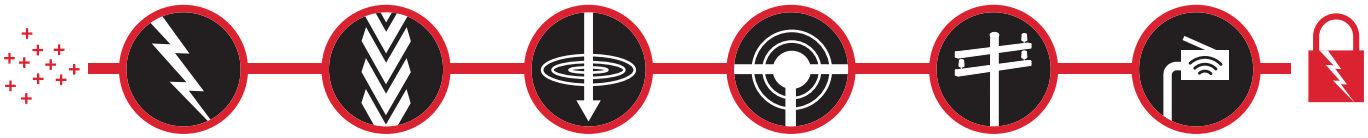
LOCAL BUILDING REQUIREMENTS

Today, nVent ERICO has designed and installed lightning protection systems for:

Airports • Amusement Parks • Churches • Commercial Facilities • Data Centers • Education and Research Buildings Government Buildings • Historic Structures • Hospitals • Hotels • Manufacturing and Industrial Plants Mining Facilities • Military Structures • Museums • Oil and Gas Facilities • Railways • Water Treatment Plants Stadiums • Telecommunications Facilities • University Buildings • Utility Substations

THE SIX POINT SOLUTION

Our entire range of products systemically works to create complete facility electrical protection: **The nVent ERICO Six Point Plan of Protection.** This provides a coordinated approach to grounding, bonding, lightning protection and surge protection. Lightning protection makes up the first two steps in this system.



1 **Capture the lightning strike to a preferred point.**

2 **Convey this energy to the ground.**

3 Dissipate the energy into the grounding system.

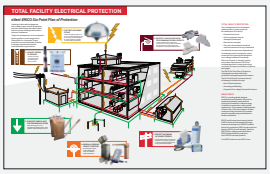
4 Bond all ground points together.

5 Protect incoming AC power feeders.

6 Safeguard low voltage data/ telecommunications circuits.

The methodology embraces all aspects of potential damage, from the obvious direct strike to the more subtle mechanisms of differential Earth potential rises and voltage induction at service entry points.

Based on our Six Point Plan of Protection, we evaluate a site and provide customized recommendations for a system and installation design.



Want to learn more about facility electrical protection and our Six Point Plan of Protection?

CLICK HERE ▶

or visit us at nVent.com/ERICO

SUPPORT SOLUTIONS

With more than a century of experience in grounding, bonding, surge and lightning protection, nVent ERICO can provide complete electrical protection from the ground up for any application or worldwide location.

With a dedicated application engineering support team, nVent ERICO:



Evaluates risk, on – or off-site



Recommends systems and project specifications



Designs systems compliant with global standards



Offers technical support

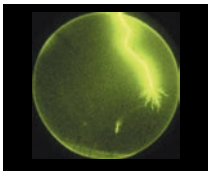


Provides training



Commissions and recommends qualified installation

How We Do It

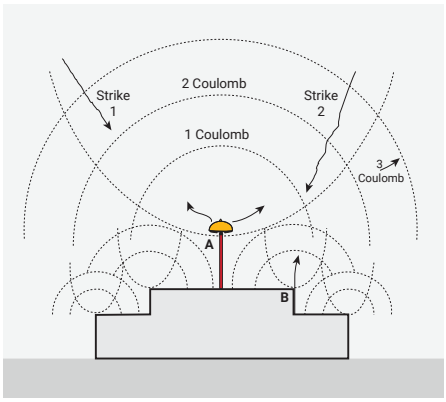





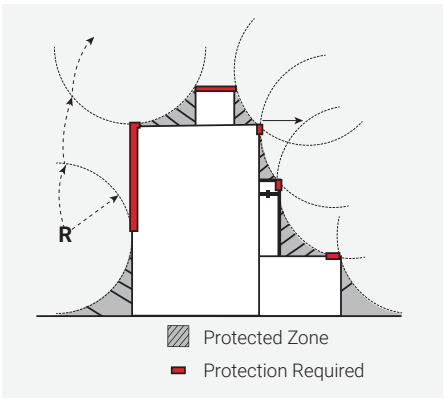
nVent ERICO has robust lightning protection system expertise with a diverse product offering that utilizes a variety of protection methodologies to provide the best, application-specific solution. With decades of research into the phenomena of a lightning strike, pioneering isolated downconductor technology and wind turbine lightning protection systems, **nVent ERICO is committed to the development of lightning protection standards around the world, including:**

- Institute of Electrical and Electronics Engineers (IEEE)
- International Electrotechnical Commission (IEC)
- Standards Australia (AS)
- National Fire Protection Association (NFPA)
- Normes Françaises (NF)
- INERIS Qualifoudre

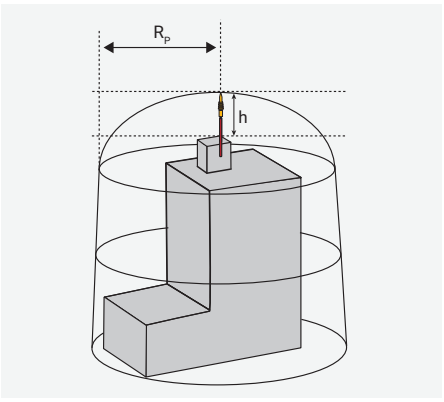
Our expertise of global standards enables us to design the most appropriate lightning protection system for each application with the most applicable terminal placement methodology, technology and standards such as:



Collection Volume Method (CVM)

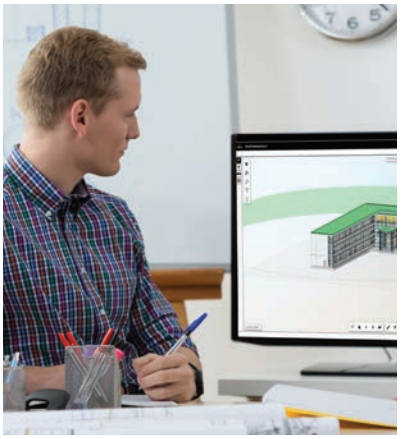


Rolling Sphere Method (RSM) based on the Electro-Geometric Model (EGM)



Early Streamer Emission terminal and Protection Radius (ESE Rp)

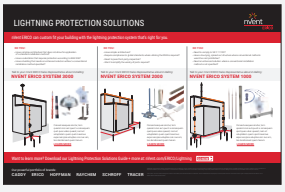
DESIGN SUPPORT



The placement of air terminals in a lightning protection system is critical for optimal protection. Our dedicated teams of engineers are available around the world to provide support for all major lightning protection standards. Our Lightning Protection System Design (LPSD) 4.0 software enables more accurate and detailed designs for any project – also in 3D!

- Risk assessments, evaluations and design assistance
- Supports NFPA 780, LPI 175, UL 96, IEC 62305, NFC 17-102 and IEEE 998 standards
- Autodesk Revit models and 3D modelling capabilities that improve design accuracy
- Complete submittal package including installation drawings, BOM, component cut sheets and risk assessment with a validation report
- Regional support teams with knowledge of relevant codes

Tell us about your lighting protection project >



nVent ERICO application engineers are UL Lightning Protection System Installer Certified and Lightning Protection Institute (LPI) Master Installer/Designer certified to help you select and custom-build a lightning protection system for your specific needs.

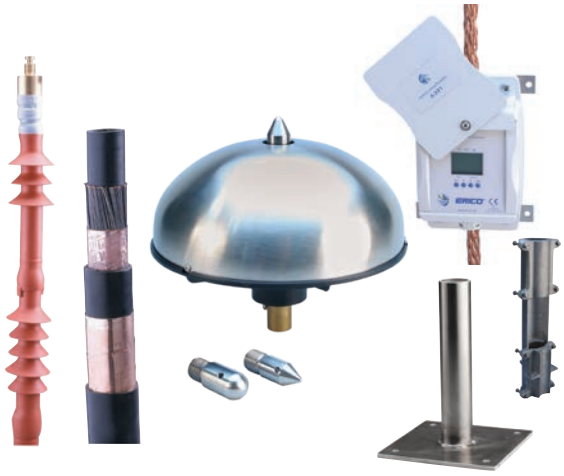
Click here to get started with our system selector >
or visit nVent.com/ERICO to learn more

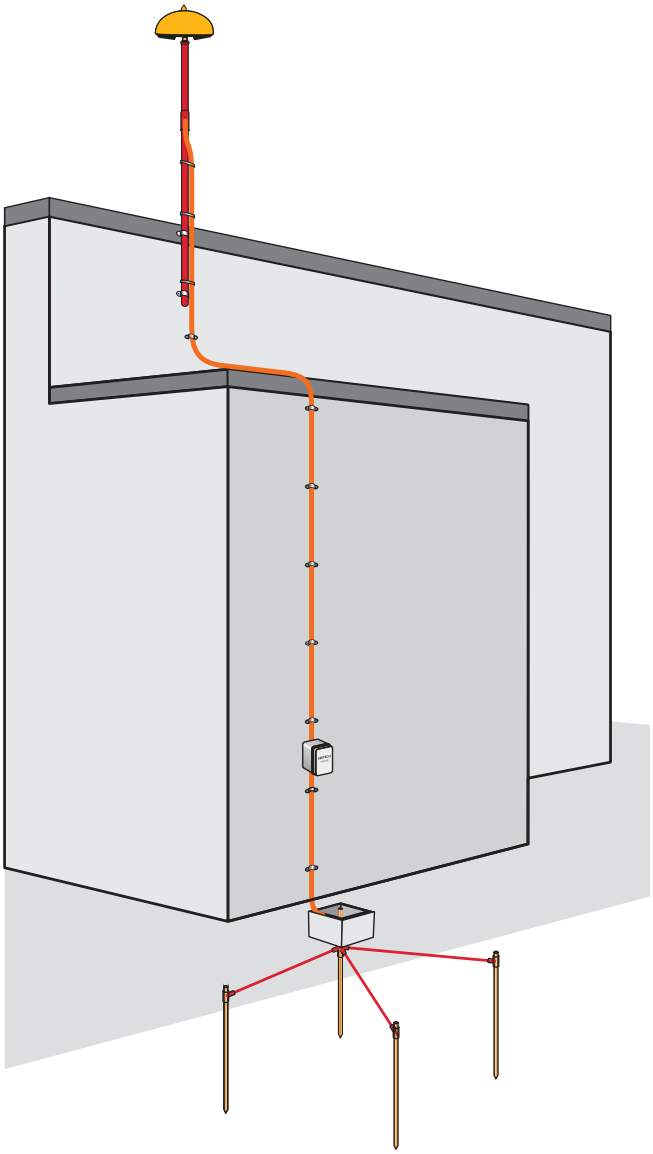
nVent ERICO System 3000

System 3000 is our premium, proprietary system for applications where other systems cannot be installed due to the type of structure, where a high level of performance certainty is needed and where there is a need to provide a known path to ground via an insulated conductor.

Ideal for:

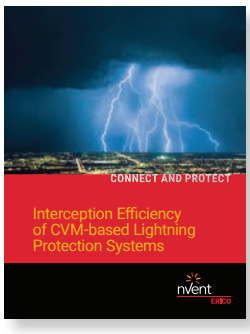
- Complex architecture that does not allow for application of a standard installation method.
- Protecting substations in compliance with IEEE 998.
- Applications without a conventional installation method specified and an enhanced solution is advantageous.





Features

- Large coverage area
- 84% to 99% strike interception efficiency
- Manufacturer-certified installation inspection available
- Single route to ground with nVent ERICO Ericore insulated conductor
- Field-validated
- Single grounding location
- Measureable strike quantity, magnitude, hour and date
- Easy to maintain
- Can withstand multiple strikes



System 3000 is backed by an unprecedented field-validation study that confirms the interception efficiency levels of a CVM-based lightning system.

CLICK HERE ▶

to download the Interception Efficiency Study for more details.

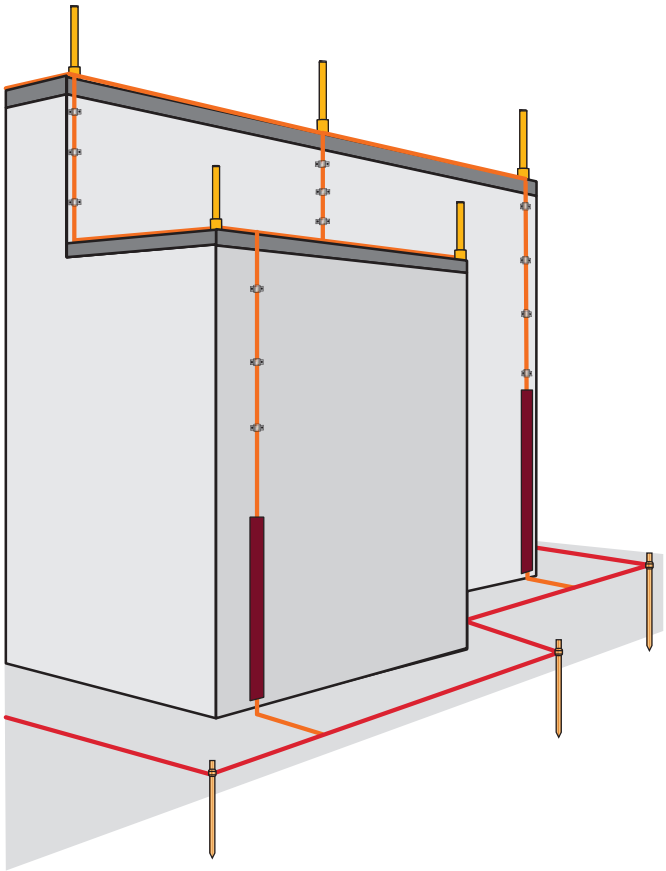
nVent ERICO System 2000

System 2000 is ideal when a conventional system is required by the design specification to comply with a specific standard (e.g. NFPA, IEC, AS) that prescribes this design method.

Ideal for:

- Designing for simple architecture.
- Compliance to global standards utilizing the RSM.
- Third-party inspection.





Features

- Standards compliant
- Third-party inspections and certifications available
- Multiple materials available for components
- Regional design support available
- Flat tape, round or stranded conductors
- Based on RSM and EGM
- Insulated down conductors for isolated systems

nVent ERICO application engineers hold certifications for installation and design of lightning protection systems with expertise in global standards, including:

International Electrotechnical Commission (IEC)/CENELEC (EN)/ British National Standard (BS) 62305 Series of Lightning Protection Standards

Standards Australia /Standards New Zealand

AS/NZS 1768:2007

National Fire Protection Institute (NFPA) 780 Standard for the Installation of Lightning Protection Systems

UL 96 A Standard for Installation Requirements for Lightning Protection Systems

Lightning Protection Institute (LPI) 175 Standard for the Design – Installation – Inspection of Lightning Protection Systems

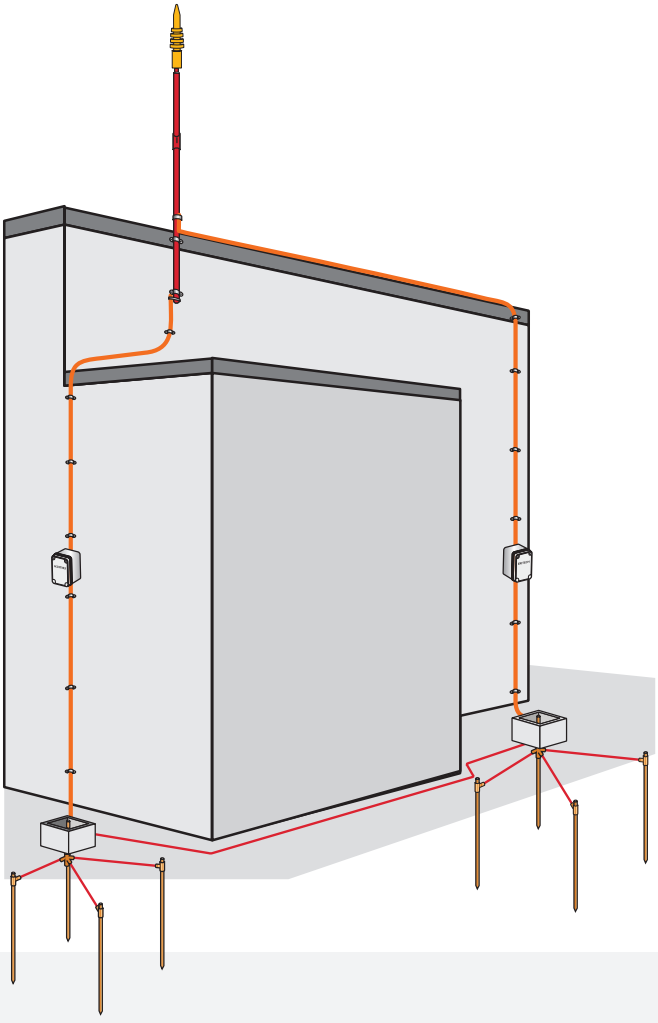
nVent ERICO System 1000

System 1000 is offered to complete the nVent range so compliance with standards that call for ESE systems can be achieved.

Ideal for:

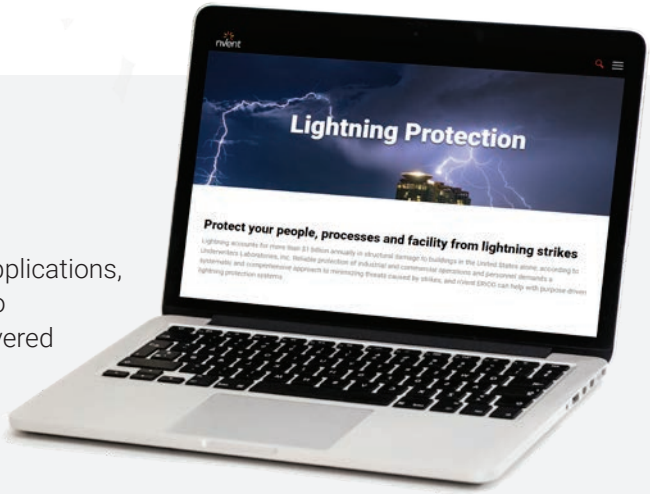
- Compliance to NF C 17-102.
- Low-lying, sprawling structures where conventional methods would be cost-prohibitive.
- Applications without a conventional installation method specified and an enhanced solution is advantageous.





Features

- NF C 17-102 compliant
- Third-party tested – test reports upon request
- Third-party inspections and certifications available
- Manufacturer certified installation inspection available
- Large coverage area
- As few as two paths to ground and two grounding locations
- Multiple materials available for components
- Flat tape, round or stranded conductors



Want to learn more?

For more about how nVent ERICO can assist with your projects or applications, visit the link below. From design capabilities and system resources to product information and educational tools, nVent ERICO has you covered (from the ground up).

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