CONNECT AND PROTECT

nVent ERICO System 3000

Lightning Protection Systems

nVent

ERICO

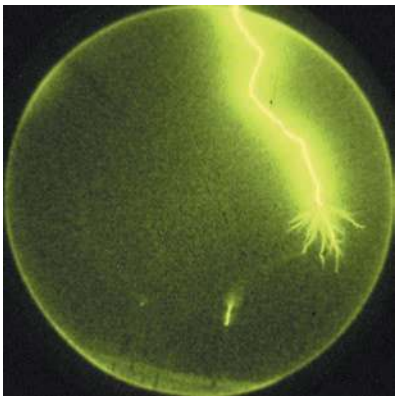
Marching with Confidence

A military combat training center upgraded their critical instrumentation system and needed it to be well protected against potential lightning strikes damage. The site consists of 25 free standing cell phone towers which support the center's live training network. Each tower is part of a high throughput, low latency network that carries video, voice, and data throughout the facility. With personnel safety and the reliability of electrical systems being so critical to the center's operations, the design engineers knew that they had to pick the right lightning protection system.

With these challenges, the engineers turned to nVent ERICO System 3000 to provide the reliability and performance that they need for this critical installation. System 3000 meets the Telecommunications Industry Association standards, providing the engineers with the confidence that they were making the right choice.

System 3000 is comprised of the proprietary nVent ERICO Dynasphere which captures lightning, the nVent ERICO Ericore downconductor that will safely transmit a direct strike to the earthing system to while protecting the critical equipment and fiber optics while preventing a spark over, and a robust grounding system including nVent ERICO Cadweld connections.

nVent Involvement in Lightning Protection Research



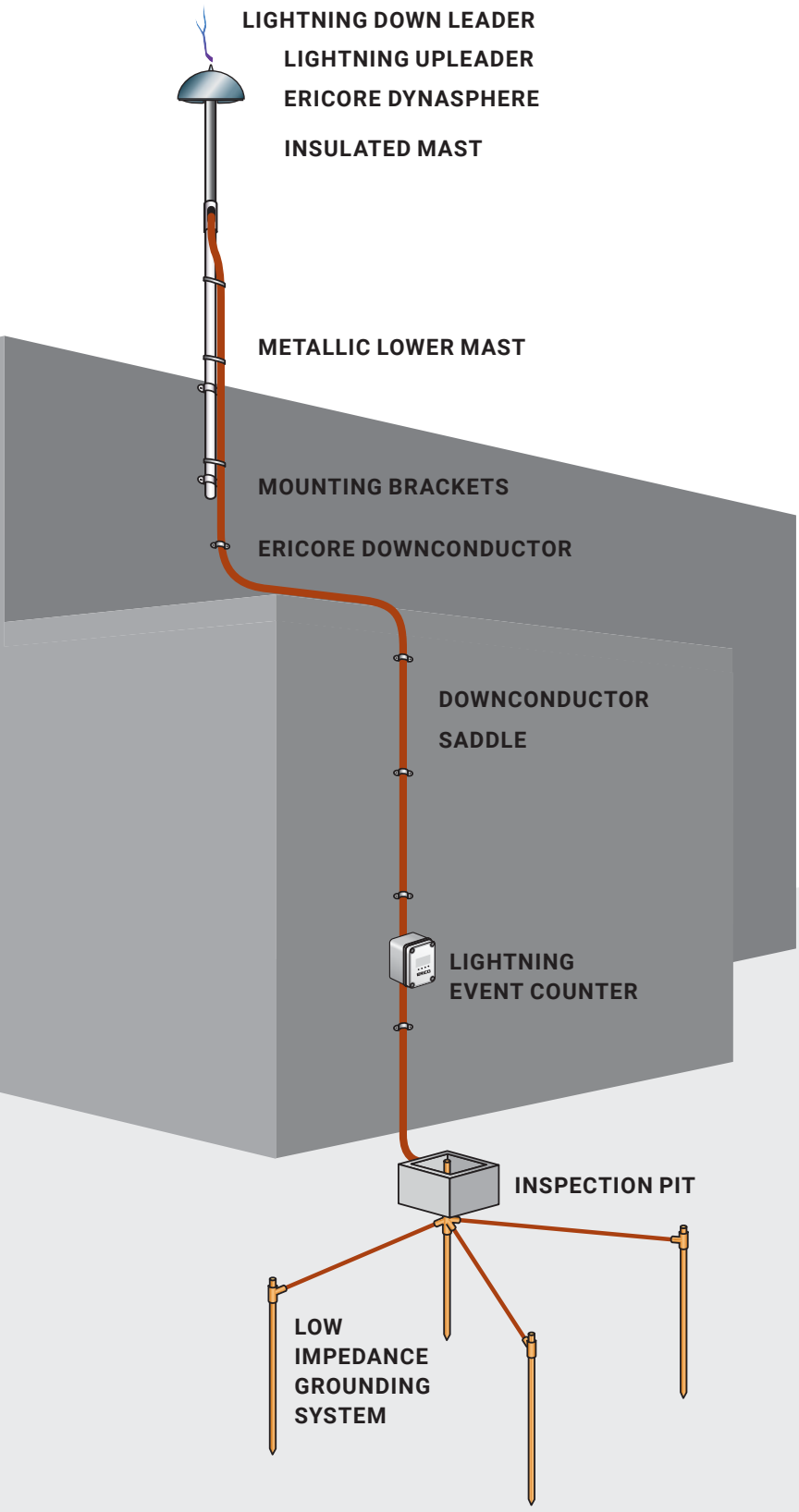
nVent has investigated the lightning protection process through years of research involving long term field studies. Laboratory testing, using some of the largest outdoor test laboratories, and countless research study programs, including joint ventures with accomplished scientists in the field have also been used in the research process. This extensive research has resulted in some of the most up-to-date published technical papers and journals. nVent is committed to the development of a range of lightning protection standards around the world.

The System 3000 has evolved from this research activity, with earlier versions of the System 3000 providing a building block for the latest advancements through extensive field studies, leading edge indoor and outdoor high voltage testing and computer modeling research support.

nVent is involved in the lightning protection industry in many countries around the world and acknowledges the diverse protection methods that exist today.

System 3000, Start to Finish

The System 3000 is a technically advanced lightning protection system.
The unique features of this system allow the achievement of reliable lightning capture and control.



1. DYNASPHERE THE AIR TERMINAL

The primary function of an air terminal, or air termination system, is to capture the lightning strike to a preferred point, so that the discharge current can be directed via the down- conductor(s) to the grounding system. The Dynasphere air terminal provides optimal lightning capture.

2. ERICORE THE DOWNCONDUCTOR

The function of a downconductor is to provide a low impedance path from the air termination to the ground system so that the lightning current can be conducted to earth, without the development of excessively large voltages that could lead to flash over of the lightning energy to the structure or equipment to be protected.

A purpose designed, insulated down conductor, acts to eliminate side flashing of the lightning energy to the structure or nearby equipment ensuring its safe conduction to earth. A low impedance designed insulated down conductor ensures the lightning energy can be safely contained within the conductor over greater lengths.

3. THE NVENT ERICO ADVANTAGE GROUNDING SYSTEM

The grounding system must have a low impedance to disperse the energy of the lightning strike. Because the lightning discharge consists of high frequency components, we are particularly concerned with the frequency-dependent electrical parameter of a grounding system – impedance – as well as low resistance grounding.

Grounding systems are highly variable from site to site due to geographical considerations. The grounding grid should minimize the ground voltage potential rise and minimize the risk of injury to personnel or damage to equipment.

6 Point Plan

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, nVent ERICO has acknowledged that no single technology can totally eliminate vulnerability to lightning and surges.

The nVent ERICO 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

1 Capture the lightning strike.
Capture the lightning strike to a known and preferred attachment point using a purpose-designed air terminal system.

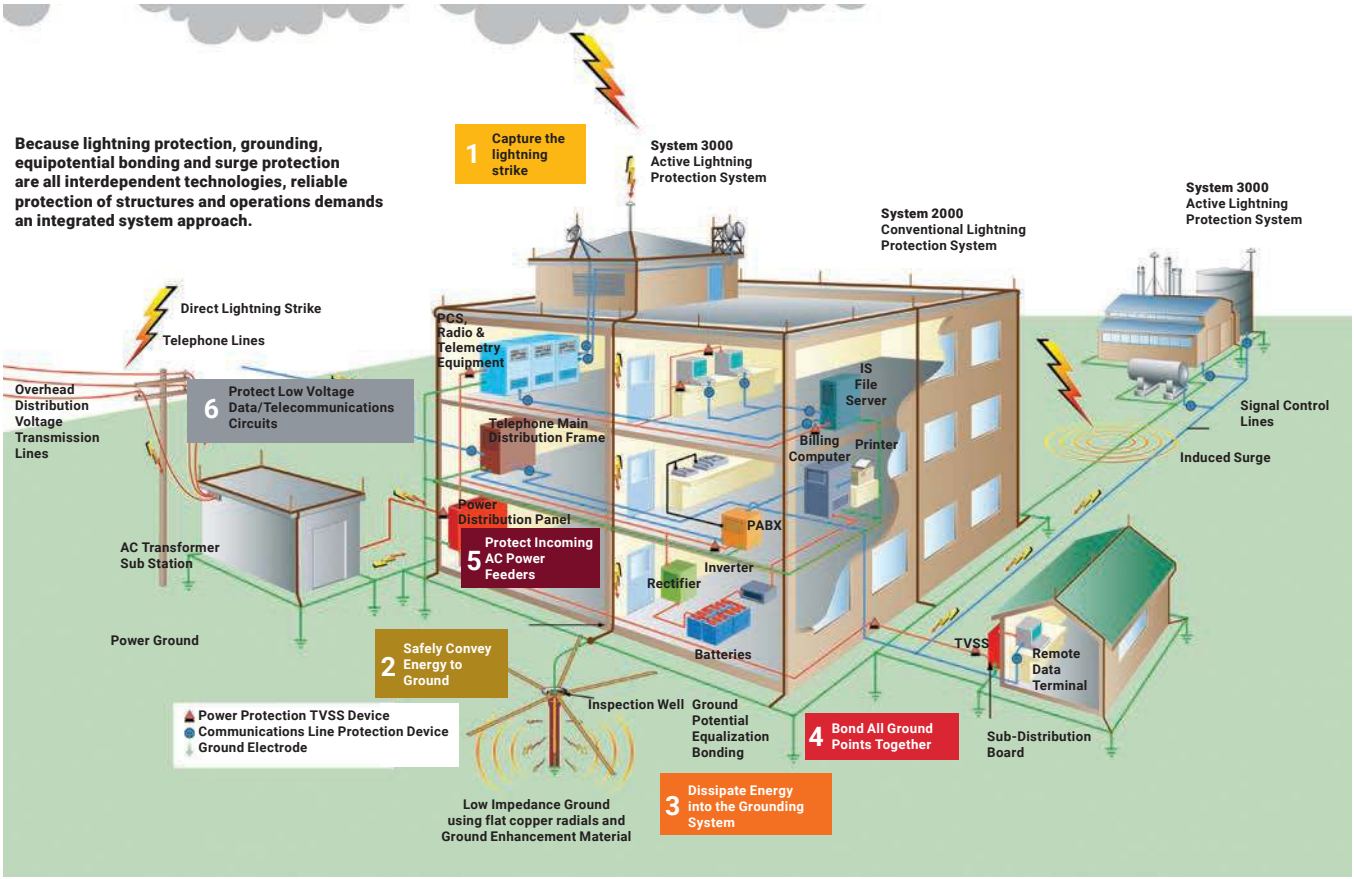
2 Convey this energy to ground.
Conduct the energy to the ground via a purpose-designed downconductor.

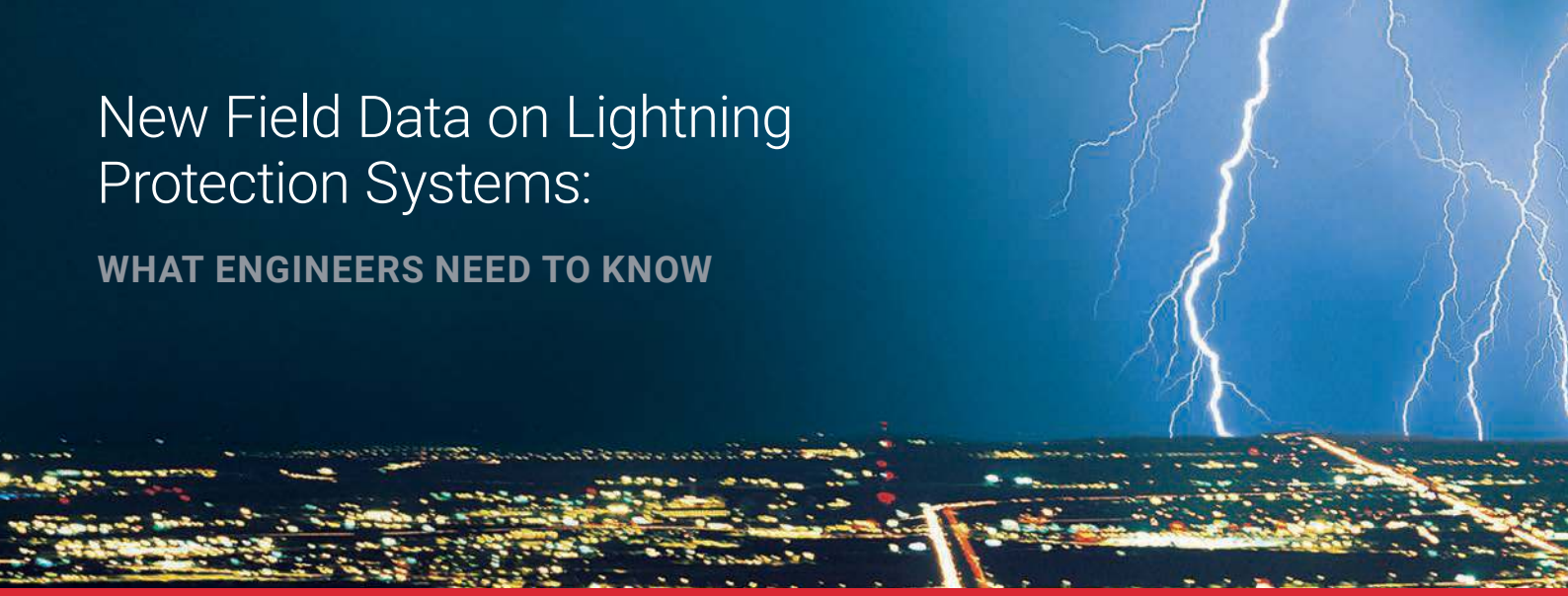
3 Dissipate energy into the grounding system.
Dissipate energy into a low impedance grounding system.

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.





New Field Data on Lightning Protection Systems:

WHAT ENGINEERS NEED TO KNOW

An unprecedented field-validation study of the Collection Volume Method (CVM) for lightning protection system releases new data on the importance of air terminal placement and the validity of the CVM's claimed interception efficiency levels.

THE STUDY:

Lightning Event Counters (LEC) were placed around the current downconductor cable to record the number of strikes to the structure's protection system via the Collection Volume Method (CVM) lightning system.

33

The number of buildings that collected a combined 37 terminal years of exposure during the study.

Kuala Lumpur, Malaysia: The location the study was conducted

2010-2012

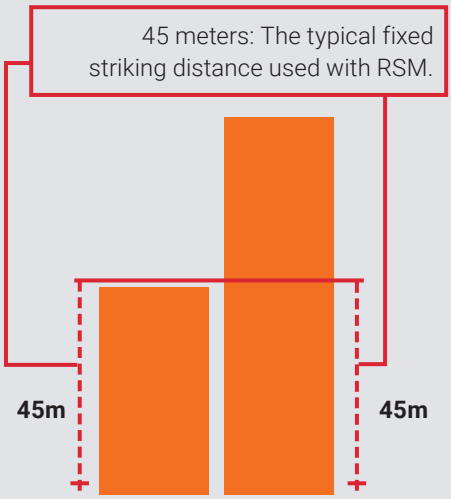
Time frame that field data was collected.

Rolling Sphere Method (RSM) vs. Collection Volume Method (CVM):

Field-tested data proves that the CVM is a viable, efficient alternative to the conventional RSM.

RSM

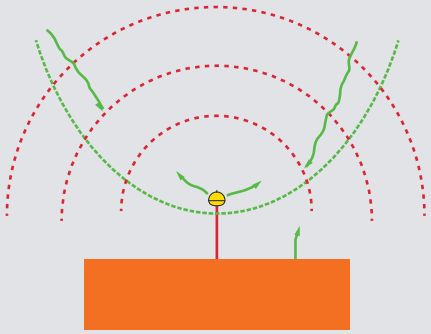
Rolling Sphere Method (RSM) uses a fixed striking distance regardless of structure height or width. The RSM does not account for the structure height or geometry of objects.



CVM

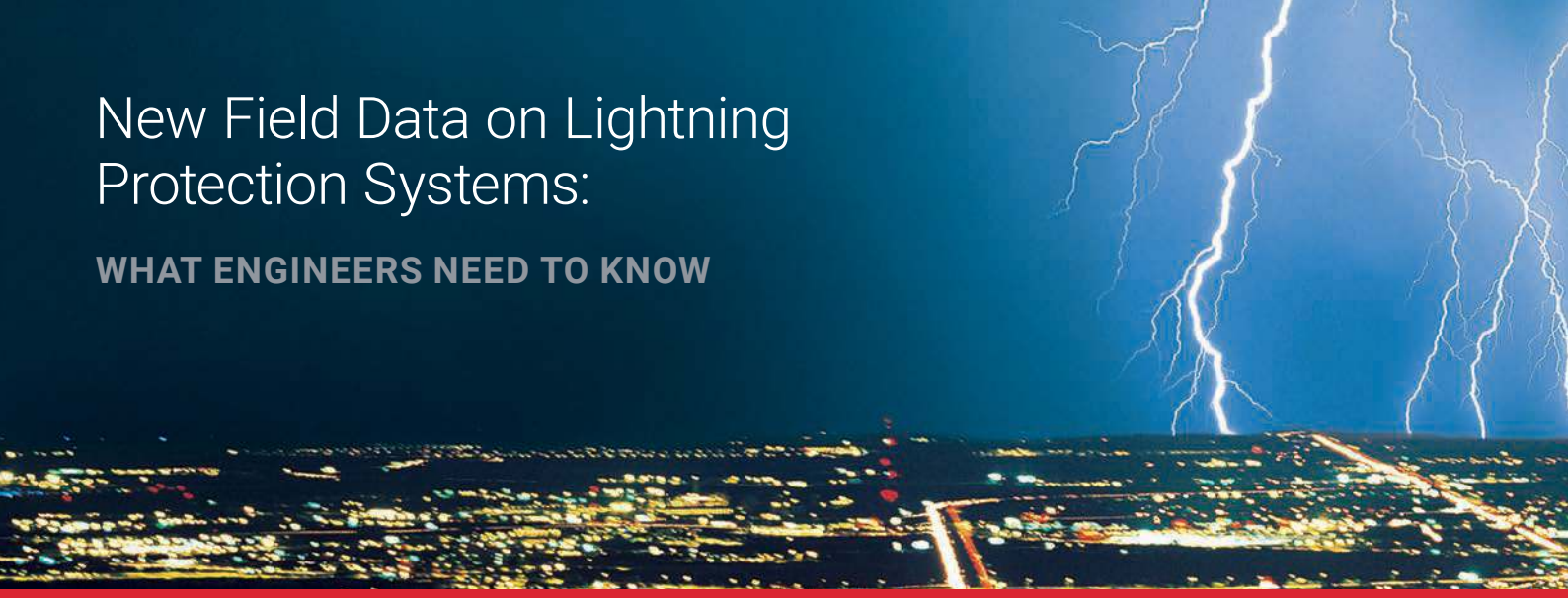
The Collection Volume Method (CVM), also known as Eriksson's Attractive Radius Model, considers the physical criteria of air breakdown.

Based on this and the electric field intensification created by different points on a structure ("attractive radius"), the CVM informs recommendations for the optimum placement of lightning rods or air terminals.



New Field Data on Lightning Protection Systems:

WHAT ENGINEERS NEED TO KNOW



IT WAS CONCLUDED THAT THE

ACTUAL (FIELD-TESTED) EFFICIENCY OF A CVM-BASED LIGHTNING PROTECTION SYSTEM

IS CONSISTENT

WITH THE PROJECTED (THEORETICAL) EFFICIENCY.

APPLICATIONS OF A CVM-BASED LIGHTNING SYSTEM:

Complex architecture does not allow for application of a standard installation method.

The architecture of a structure deems the application of a conventional lightning protection system impractical.

No installation method has been specified and an enhanced solution is advantageous.

WANT TO LEARN MORE?

READ THE FULL STUDY AND DISCOVER THE NEXT STEPS YOU CAN TAKE

Read The Full Study:

Air terminal placement is essential to an efficient and effective lightning protection system. An unprecedented field-validation study of the Collection Volume Method (CVM) for lightning protection systems sheds powerful new insights on optimum air terminal placement and the validity of the CVM's claimed interception efficiency levels.

Outlined below is what engineers need to know before starting their next lightning protection project.

THE FINDINGS

- Enhanced air terminals with CVM placement, such as the Dynasphere, offer a zone of protection consistent with claimed interception efficiency levels of 84% – 99%, based on the desired level of protection.

ENHANCED AIR TERMINALS WITH CVM PLACEMENT, SUCH AS THE DYNASPHERE, OFFER A ZONE OF PROTECTION CONSISTENT WITH CLAIMED INTERCEPTION EFFICIENCY LEVELS OF 84% – 99%, BASED ON THE DESIRED LEVEL OF PROTECTION.

  - Lightning rods can be placed according to various models currently used in the lightning protection field.
  - The most common method for air terminal placement is the Rolling Sphere Method (RSM), which is based on the simple Electro Geometric Model (EGM) for striking distance.
  - The simple EGM does not account for the importance of the structure height or geometry of objects on the structure.
  - The RSM uses a fixed striking distance, typically 45 meters, regardless of structure height or width. This means that a 5-meter structure is given the same capture area and strike probability as a 100-meter communications tower.
- The Collection Volume Method (CVM), also known as Eriksson's Attractive Radius Model, considers the physical criteria of air breakdown, and the electric field intensification created by different points on a structure.

THE COLLECTION VOLUME METHOD (CVM), ALSO KNOWN AS ERIKSSON'S ATTRACTIVE RADIUS MODEL, CONSIDERS THE PHYSICAL CRITERIA OF AIR BREAKDOWN, AND THE ELECTRIC FIELD INTENSIFICATION CREATED BY DIFFERENT POINTS ON A STRUCTURE.

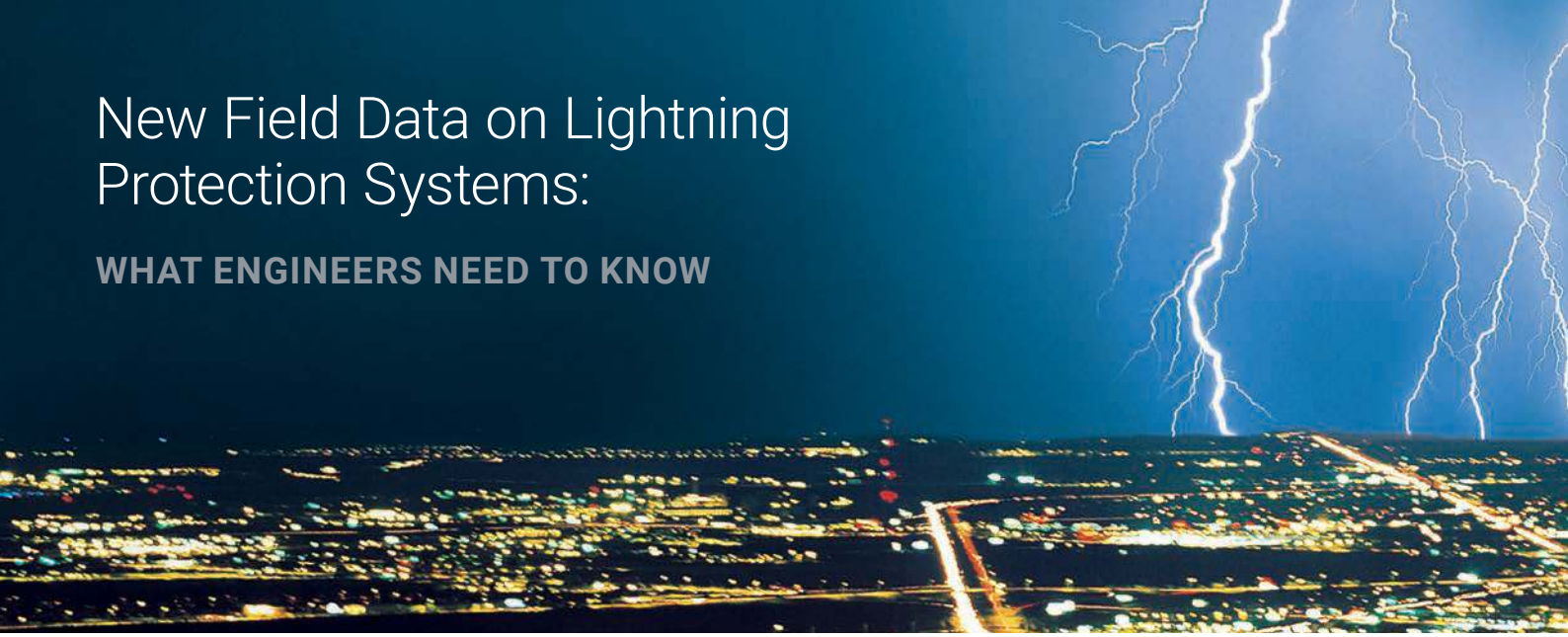
  - CVM takes into consideration the building's features. It then uses this information to provide the optimum lightning protection system for a structure, i.e., the most effective placement of air terminals for a selected interception efficiency level.
- Based on field data, the actual (field-tested) efficiency of a CVM-based lightning protection system is consistent with the projected (theoretical) efficiency.
  - Overall, estimates of the strike "yield" demonstrate that the interception efficiency predicted by the CVM is consistent with the observed capture frequency. This means that the lightning interception efficiency is at least as high as the claimed levels (84% – 99%).

THE STUDY

- "Interception efficiency of CVM-based lightning protection systems for buildings and the fractional Poisson model," published in December 2015 by Harold S. Haller and Wojbor A. Woyczynski, examines the level of interception efficiency claimed by the CVM.
- This study is the only of its kind, as it demonstrated that the CVM meets its claimed interception efficiencies based on field data.
- A study of 33 buildings was conducted between 2010 and

New Field Data on Lightning Protection Systems:

WHAT ENGINEERS NEED TO KNOW



2012, in Kuala Lumpur, in the Klang Valley region of Malaysia.

- The buildings, protected by a system of air terminals optimally placed according to the CVM, were surveyed by TÜV-Hessen, an independent expert organization.
- For each site, System 3000 products were used. The number of strikes to the to the air terminals were obtained from "lightning event counters" (LEC) placed around the lightning downconductor cable.
- At each installation, TÜV-Hessen surveyed the buildings and documented evidence of lightning damage and recorded the readings of instruments showing the number of captured lightning events.
- The average interception efficiency of the lightning protection systems was measured against the predicted average interception efficiency on which the CVM-optimized terminal placement had been based. The average interception efficiency was found to differ by only 0.20% from the predicted efficiency.
- Analyzed field data was also compared to mathematical models of CVM.
  - Through a new mathematical model, the study authors were able to replicate the characteristic randomness of a natural event like a lightning strike.
  - Their model confirms that the interception efficiency of a CVM-based lightning protection system is consistent with claims of 84% – 99% effective based on the desired level of protection.

SYSTEM 3000 LIGHTNING PROTECTION PRODUCTS

SYSTEM 3000 PRODUCTS, WHEN USED TOGETHER, CREATE A TECHNICALLY ADVANCED LIGHTNING PROTECTION SYSTEM. THE UNIQUE FEATURES OF THIS SYSTEM ALLOW THE ACHIEVEMENT OF RELIABLE LIGHTNING CAPTURE AND CONTROL, WHEN COMBINED WITH CVM PLACEMENT.

- System 3000 products, when used together, create a technically advanced lightning protection system. The unique features of this system allow the achievement of reliable lightning capture and control, when combined with CVM placement.
- The Dynasphere air terminal provides a preferred point for lightning discharges that would otherwise strike and damage an unprotected structure and/or its contents. The Dynasphere is optimally connected to an Ericore downconductor and low impedance grounding system to provide a totally integrated system.
- System 3000 includes:
  - **Dynasphere air terminal**
  - **Ericore downconductor**
  - **Lightning Event Counter (LEC)**
  - **Purpose designed low impedance grounding system**

LABORATORY TESTING, USING SOME OF THE LARGEST OUTDOOR TEST LABORATORIES, AND COUNTLESS RESEARCH STUDY PROGRAMS—INCLUDING JOINT VENTURES WITH ACCOMPLISHED SCIENTISTS IN THE FIELD—HAVE ALSO BEEN USED IN THE RESEARCH PROCESS.

- These components form an integral part of the nVent Six Point Plan of Protection.
- nVent is committed to the development of lightning protection standards around the world.
  - Laboratory testing, using some of the largest outdoor test laboratories, and countless research study programs—including joint ventures with accomplished scientists in the field—have also been used in the research process.
  - This extensive research has resulted in some of the most up-to-date published technical papers and journals.
  - System 3000 products have evolved from this research activity, with earlier versions of System 3000 products providing a building block for the latest advancements through extensive field studies, leading edge indoor and outdoor high voltage testing, and computer modeling research support.

SYSTEM 3000 PRODUCTS HAVE EVOLVED FROM THIS RESEARCH ACTIVITY, WITH EARLIER VERSIONS OF SYSTEM 3000 PRODUCTS PROVIDING A BUILDING BLOCK FOR THE LATEST ADVANCEMENTS THROUGH EXTENSIVE FIELD STUDIES, LEADING EDGE INDOOR AND OUTDOOR HIGH VOLTAGE TESTING, AND COMPUTER MODELING RESEARCH SUPPORT.

LEARN MORE

Download the full study for more details. To learn more about System 3000 products:

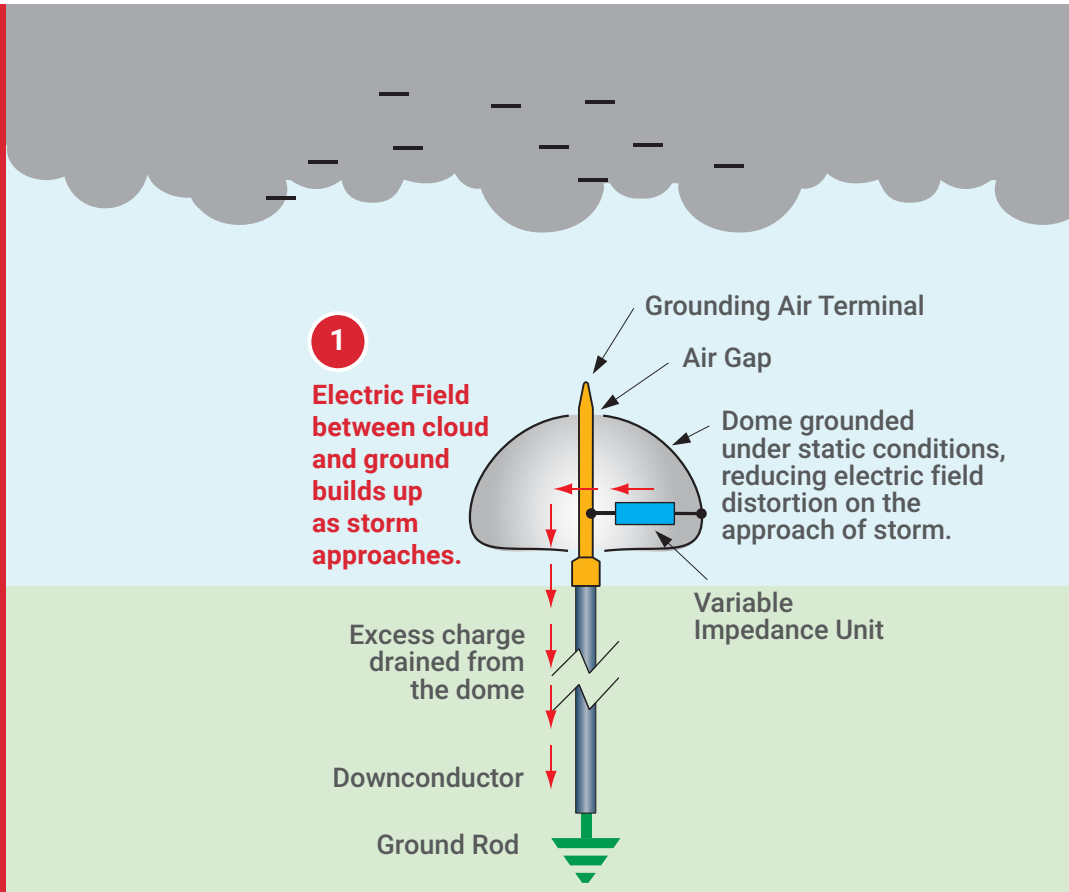
- Download the System 3000 product guide.
- Register for engineering training with nVent.
- Schedule a consultation with a nVent lightning protection expert.

How It Works:

WITH NO LIGHTNING PROTECTION:

There is no known method of preventing the occurrence of a lightning discharge.

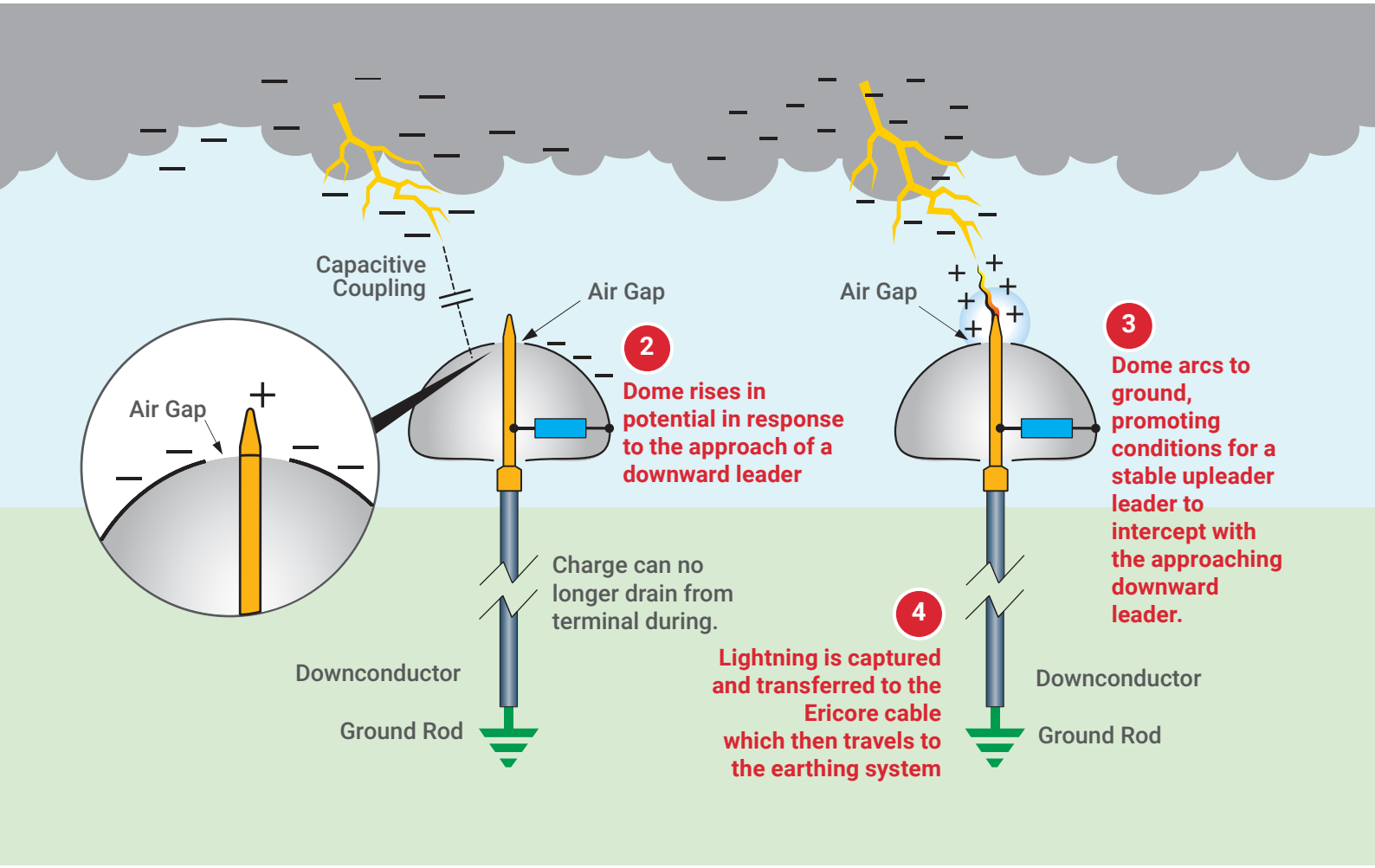
The purpose of a lightning protection system therefore, is to control the passage of a discharge in such a manner that prevents personal injury or property damage. The need to provide protection should be assessed in the early stages of the structure design.



System 3000

Dynasphere

Air Terminal design & technology that will improve the efficiency of your facility electrical protection system.



Ease of Maintenance

Air Terminal tips are provided that optimize performance for the relative height of the installation, and are also easily replaced in the event they become damaged from excessive strike in extremely volatile locations.

Lightning Event Counter

When lightning does strike the counter will record each event.

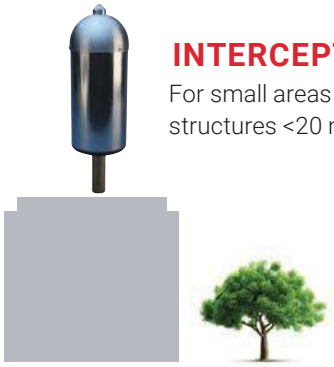
Why It Works:

The number of strikes to the protection system of the structures in this study were obtained from "lightning event counters" (LEC) placed around the lightning downconductor cable. Overall, estimates of the strike "yield" demonstrate that the interception rate predicted by the CVM is in excellent agreement with the observed capture frequency. This means that the lightning-interception rate is at least as high as the claimed protection levels, which lie in the 87 – 99% range.

The second study, conducted from 1990 through 2000 in Malaysia, quantified interception efficiency. The study consisted of a statistically valid sample of buildings mainly in the Klang Valley region of Kuala Lumpur. The 47 sites had between 1 and 5 buildings per site with a mean structure height of 58 m (190 ft).

The mean actual protection level was 78%, confirming that up to 22% of low-intensity flashes under 10 kA could bypass the lightning protection system (LPS). Mitigating factors such as budget constraints and subsequent changes to the structures (e.g. the addition of antennas and extensions) impacted the initial design and prevented the protection level from being higher. At the end of the study, the actual interception efficiency was 86%, ten percent better than predicted.

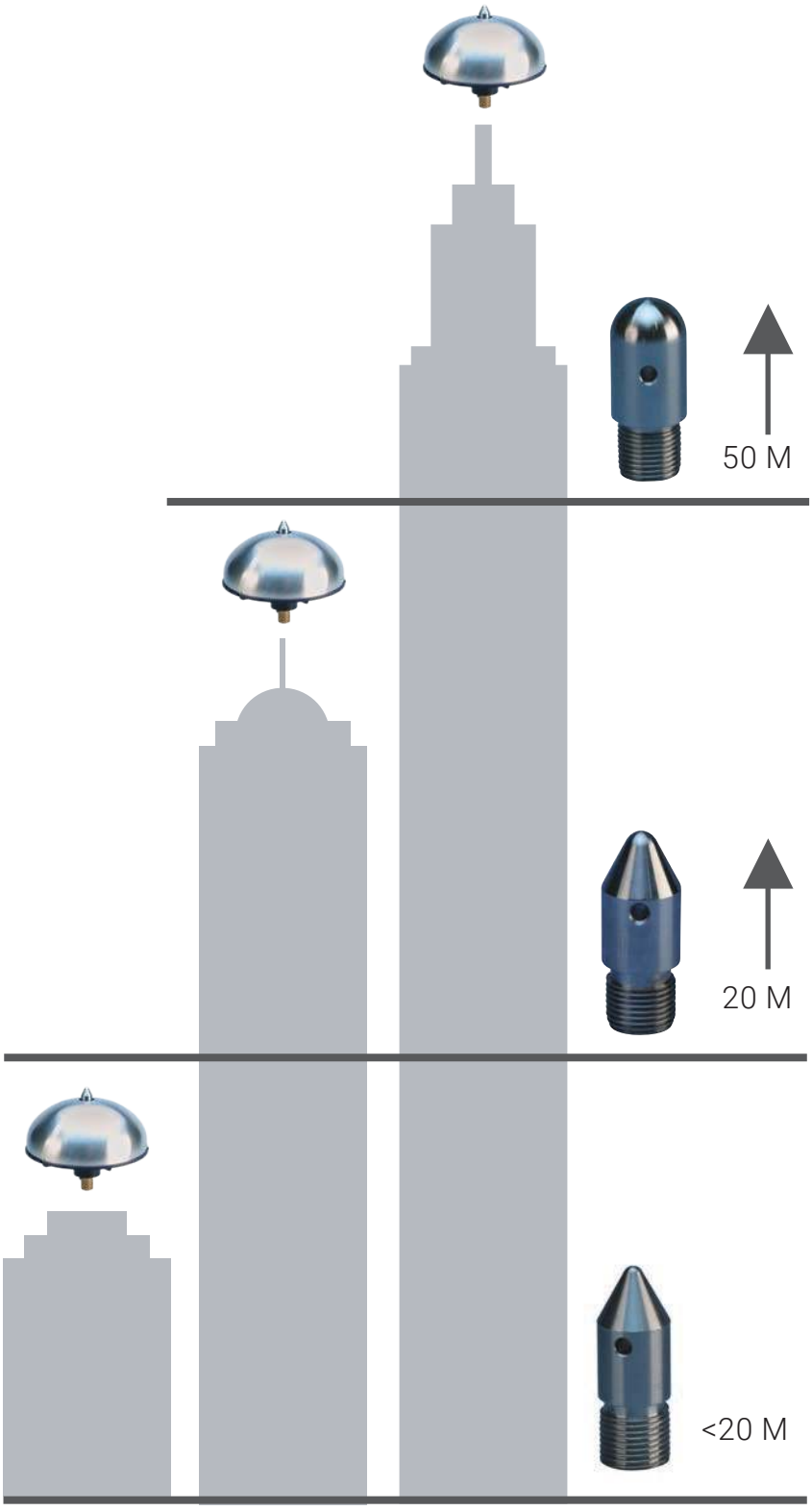
Both of these long-term field studies are now published in independently peer-reviewed scientific journal publications.



INTERCEPTOR

For small areas or structures <20 m

AIR TERMINAL TIP SELECTION BASED ON RELATIVE AIR TERMINAL HEIGHT



nVent ERICO System 3000

nVent ERICO Interceptor MKIV.

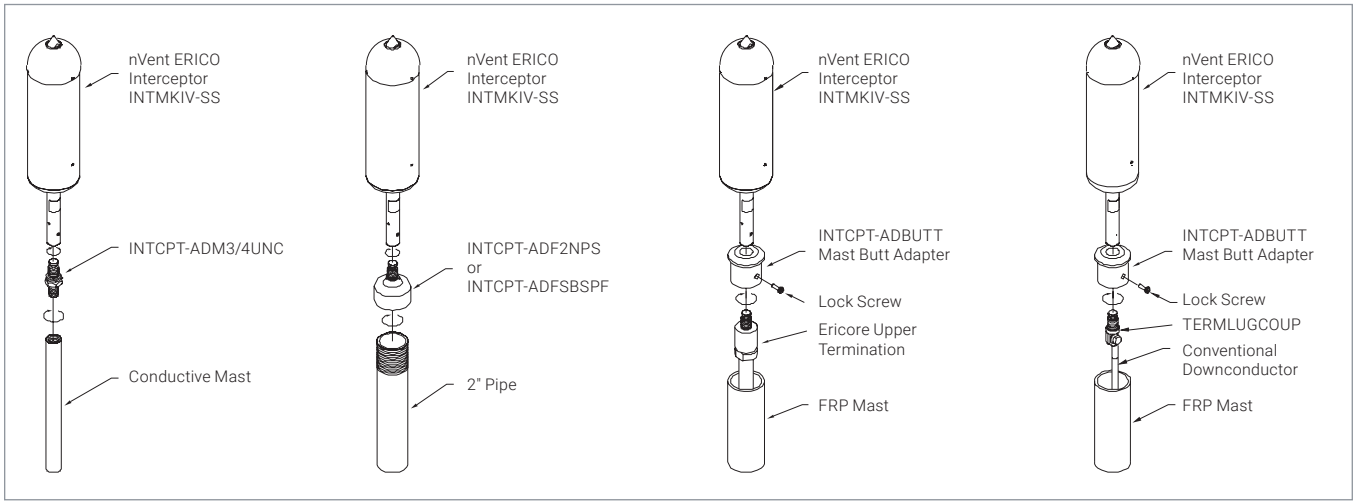
Various mounting options

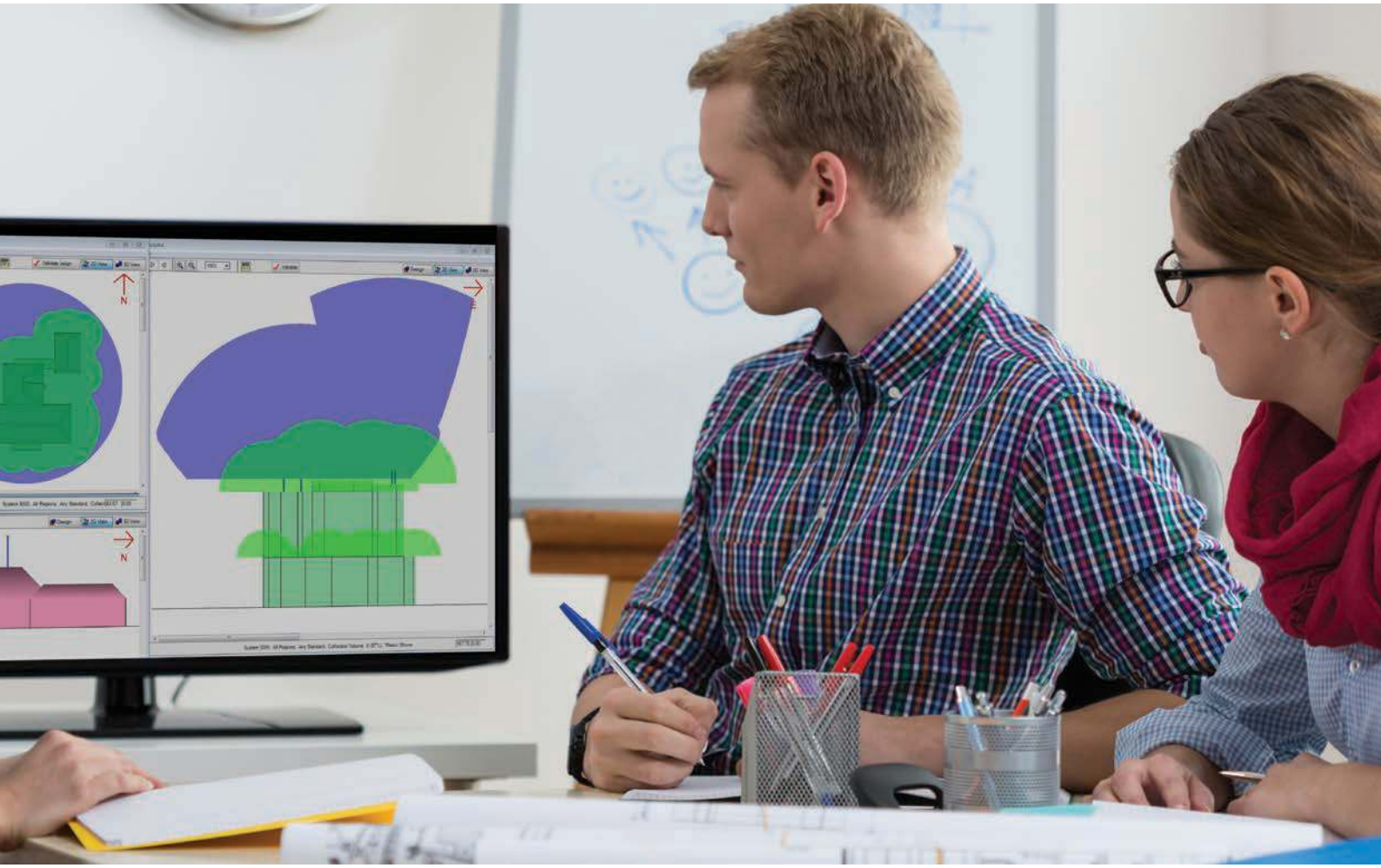
The nVent ERICO Interceptor Air Terminal is specifically designed for smaller installations that do not require the larger protection radius offered by the nVent ERICO Dynasphere.

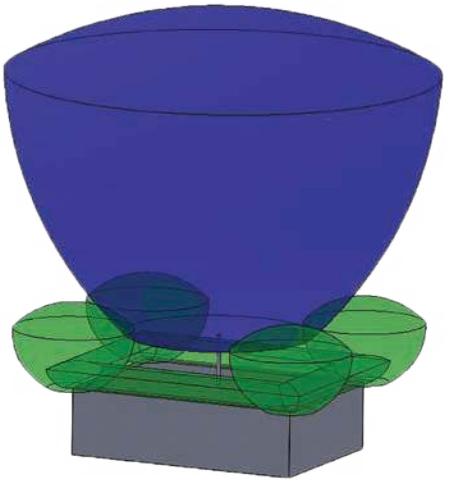
The nVent ERICO Interceptor is based on similar technology to the nVent ERICO Dynasphere, but its smaller shape limits its applications to those structures with a smaller footprint such as a cluster of antennae or those that are less than 20 m tall (65 ft).

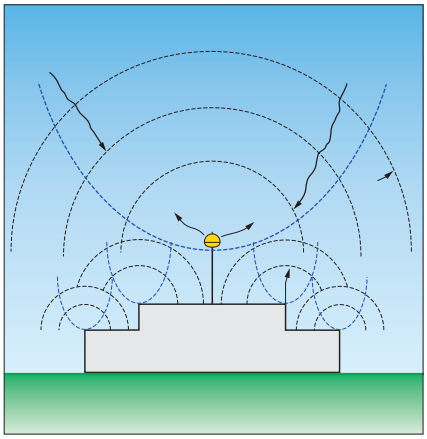
As the nVent ERICO Interceptor tip is limited to small areas or structures under 20 m tall, it is supplied with one standard tip shape. Various mounting arrangements for the nVent ERICO Interceptor are shown below:

nVent ERICO Interceptor









DESIGN SUPPORT

nVent ERICO application engineers will design your lightning protection system to optimize protection against harmful strikes. Our LPSD software utilizes the CVM to ensure that your Dynaspheres have proper to placement for your facility.

The placement and application of the System 3000 is critical to ensure optimal protection is provided.nVent's unique computer aided design program enables easier, reliable application of the System 3000, taking into account individual site parameters and the variables required to complete an optimal design using the CVM. Please contact your nearest nVent ERICO office for applications engineering support.

METHOD

CVM accounts for much more than the Rolling Sphere Method (RSM). The RSM is based on the Electro Geometric Model for striking distance. CVM considers the height as well as the geometry of the objects on the structure.

The Collection Volume Method defines the lightning "capture volume" of potential strike points on a structure. This method is used in conjunction with the System 3000 lightning protection system but is equally applicable for the placement of conventional terminals.

nVent ERICO Ericore Downconductor

Cutaway diagram showing the composite layers of Ericore Downconductor. Ericore upper termination.

TECHNICAL AND DESIGN CHARACTERISTICS OF ERICORE

The Ericore downconductors have been designed to meet criteria for an effective and reliable downconductor, with the following key characteristics:

- low inductance per unit length
- low surge impedance
- carefully controlled internal electric field distribution to minimize field stresses under current impulse conditions
- carefully designed, stress reducing upper termination

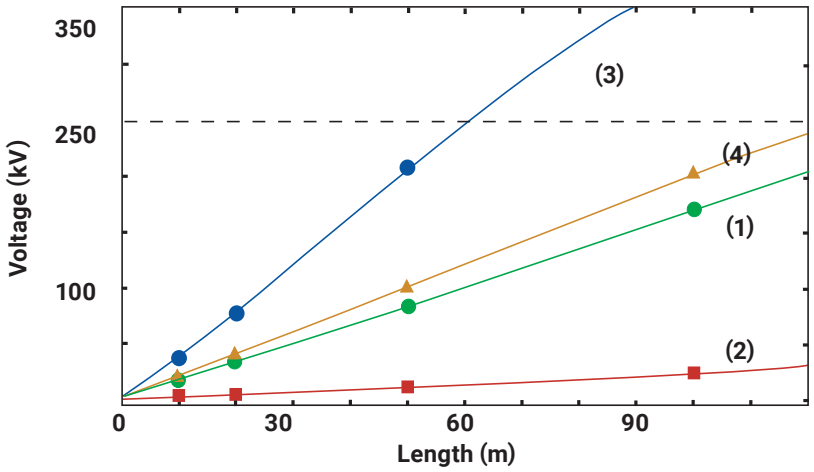
The Ericore Downconductor is easily retrofitted to existing structures. Inset: nVent ERICO Lightning Event Counter (LEC V) installed to register strikes to System 3000.

THE ERICORE DOWNCONDUCTOR

As an integral part of the System 3000, multi-layered, low impedanceinsulated Ericore downconductor conveys the lightning discharge current to ground with minimal danger of sideflashing. A unique semi-conductive outer sheath allows electrostatic bonding of the building through cable securing saddles.

The Ericore downconductor evolved after extensive studies of potential voltage rise in structures due to lightning injection. This cable is comprised of carefully selected dielectric materials, which create capacitive balance and help ensure insulation integrity under high impulse conditions.

The unique ability of Ericore to confine a discharge current and simultaneously support electrical bonding helps ensure minimal risk to building, occupants and sensitive electronics.

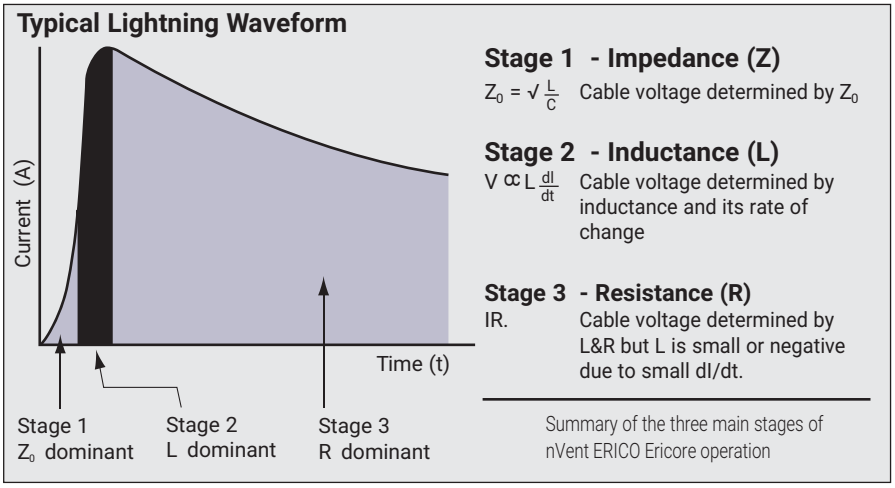


	Type Discharge	% Less Than	Waveshape (µs)	di/dt (max) (kA/µs)	Peak Current (kA)
1	–ve	50	5.5/75	24.3	70.1
2	+ve	50	22/230	2.4	28.7
3	–ve	95	1.8/30	65.0	51.9
4	+ve	95	3.5/25	32.0	59.1

Statistics taken from IEC 62305 Part 1.

To understand the technical value of the cable, it is first necessary to review the problems associated with normal downconductors. A value of inductance of 1.6 µH/m is normally regarded as quite small. However, when a current is impressed which is rising at the rate of 1000 Amperes per second, the effect of this inductance becomes dominant. As an example, a single 60 meter downconductor will rise to a value in excess of 1,000,000 volts with the application of an average discharge. It is for this reason that the Ericore downconductor has a significant advantage over conventional downconductors.

nVent ERICO Ericore Downconductor



Summary of the three main stages of nVent ERICO Ericore operation

nVent ERICO Ericore Characteristic	
Characteristic impedance (Ω)	<12
Inductance (nH/m)	37
Capacitance (nF/m)	0.75
Cross Sectional Area of Conductor – mm^2	55
Resistance RDC (mΩ/m) Resistance Rimpulse (mΩ/m)*	0.5 6
Upper Termination Voltage withstand (kV)	250
Weight (kg/m)	1.2
Diameter (mm)	36

Characteristics of nVent ERICO Ericore downconductor.
* Due to skin effect

nVent ERICO Ericore offers purpose-designed performance in each phase of the lightning control process to help convey the energy safely to the grounding system.

As an example, consider the following comparison between the same 50 m length of conventional downconductor (25 mm x 3 mm copper tape) and nVent ERICO Ericore downconductor, using the air breakdown electric field (nominally 3 MV/m) and cable termination voltage (250 kV) as the criterion for "failure" of the downconductors.

The conventional downconductor will, conservatively, cause a flashover or structure dielectric breakdown when carrying lightning currents of only ~ 30 kA. On the other hand, the nVent ERICO Ericore screened/insulated downconductor can easily handle far greater lightning currents. This magnitude of lightning current is exceeded in only ~ 5% of lightning events or approximately once every 30 years in a region with a ground flash density of 5 strikes/km^2/yr (approximately 80 thunder days/yr).

Main Benefits

- Lightning impulse is contained within the cable and the semiconductive outer sheath is bonded to the structure via metallic saddles, which means that the risk of sideflashing is negligible
- The low characteristic impedance of the cable minimizes internal dielectric failure
- The cable is able to be routed away from sensitive equipment, electrical wiring, structural steel and human work areas
- Use of a single downconductor as opposed to multiple downconductors
- Ease of installation
- Minimal maintenance

WHY USE NVENT ERICO ERICORE?

The nVent ERICO Ericore downconductor cable is purpose- designed low inductance, low impedance cable designed to minimise voltage build-up due to lightning impulses. This cable provides significantly higher performance than any normal HV cable and is specially designed for the control of lightning impulses.

The main danger in controlling lightning impulses is the very fast voltage and current rise times following the capture of the lightning strike.

To further understand the technical value of the cable, it is necessary to review the lightning mechanism and resulting voltage build-up. The voltage between inner conductor and outer sheath is determined by three different parameters. These are dominant at different stages during the operation of the cable in conveying lightning energy to ground (as shown in The Typical Lightning Waveform Table.)

nVent ERICO Ericore Downconductor

Unique downconductor which quickly and safely transfers lightning strikes to the grounding system. It's insulated design protects the structure from arcing integrity while reducing components in your LPS.

FILLER FOR INCREASED EFFECTIVE DIAMETER

MAIN CONDUCTOR

DOUBLE LAYER COPPER TAPE

TRIPLE LAYERED INSULATION (SEMI-CONDUCTIVE)

COPPER TAPE SCREEN

ELECTRICALLY CONDUCTIVE PLASTIC SHEATH

WHY USE ERICORE?

The Ericore downconductor cable is purpose-designed low inductance, low impedance cable designed to minimise voltage build-up due to lightning impulses. This cable provides significantly higher performance than any normal HV cable and is specially designed for the control of lightning impulses.

The main danger in controlling lightning impulses is the very fast voltage and current rise times following the capture of the lightning strike.

To further understand the technical value of the cable, it is necessary to review the lightning mechanism and resulting voltage build-up. The voltage between inner conductor and outer sheath is determined by three different parameters.

These are dominant at different stages during the operation of the cable in conveying lightning energy to ground.

MAIN BENEFITS

- Lightning impulse is contained within the cable and the semiconductive outer sheath is bonded to the structure via metallic saddles, which means that the risk of sideflashing is negligible
- The low characteristic impedance of the cable minimizes internal dielectric failure
- The cable is able to be routed away from sensitive equipment, electrical wiring, structural steel and human work areas
- Use of a single downconductor as opposed to multiple downconductors
- Ease of installation
- Minimal maintenance

Products

SYSTEM 3000

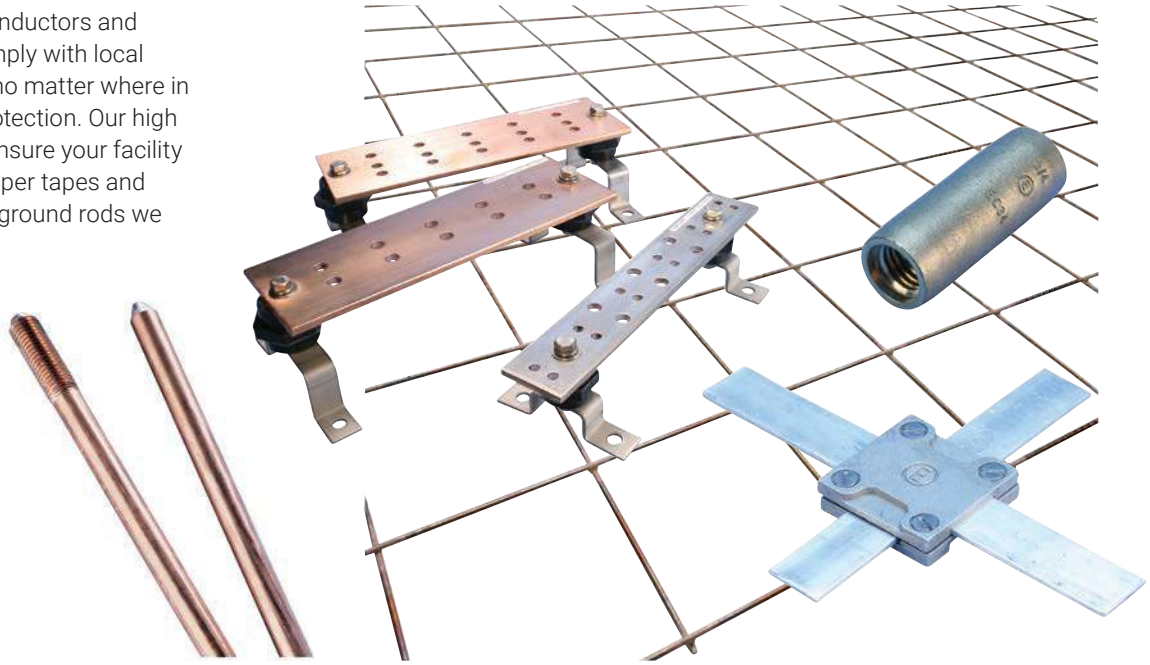
Take your lightning protection to the next level with 21st century protection. Utilizing CVM, this system will reduce maintenance and lengthy inspections associated with conventional systems.

Proven performance when coupled with our Ericore down conductor, masts, and lightning event counters.

Thousands of installations throughout the world protect high profile structures from stadiums and skyscrapers to sub stations.

GROUNDING CONDUCTORS, CONNECTORS AND ACCESSORIES

nVent ERICO offers conductors and couplings that will comply with local codes and standards no matter where in the world you need protection. Our high quality materials will ensure your facility is protected. From copper tapes and rounds, to busbars, to ground rods we have you covered.



Products

THE ORIGINAL NVENT ERICO CADWELD EXOTHERMIC WELDING SYSTEM.

Invented in 1938. Patented in 1939. nVent ERICO Cadweld has been making connections easier for installers from the beginning and leading the industry in quality, performance and innovation ever since.

nVent ERICO continues to innovate with an unwavering commitment to safe, adaptable, easy-to-use products. The updated nVent ERICO Cadweld Plus Impulse Exothermic Welding Control Unit incorporates features designed to accommodate multiple power sources and improve safety.

SURGE PROTECTION

nVent ERICO offers power surge protection solutions in a coordinated approach where the first stage of defense is the installation of primary protection devices at the mains supply service entrance, followed by secondary protection at distribution branch panels and where necessary, at point-of-use applications.

Features can include TD Technology, replaceable modules, thermal protection, local & remote status indication, and short circuit current cartridge fusing

nVent ERICO System 3000

nVent ERICO Dynasphere

DSMKIV-SS (702085) 5 kg
Air terminal

nVent ERICO Interceptor

INTMKIV-SS (702089) 2 kg
Air terminal for smaller protection areas or structures <20 m tall.

nVent ERICO Ericore

nVent ERICO Ericore (701875) 1.2 kg per meter Insulated downconductor.

nVent ERICO Ericore Upper Terminations

Ericore/TRM/OS (701915) 1.5 kg
Factory upper termination to outside of cable drum.
Ericore/TRM/IS (701815) 1.5 kg
Factory termination to inside of drum.
Ericore/UTKITA (702025) 1.0 kg
Kit for field upper termination.

nVent ERICO Ericore Lower Termination

Ericore/LTKITA (702005) 1.5 kg
nVent ERICO Ericore connection to grounding grid.

Inline Coupling

I/LCOUPL (701320) 2.25 kg
Connects FRP mast to lower Aluminum mast. Provides guy attachment points and nVent ERICO Ericore exit point.

Stainless Steel Mounting Bracket

7000250S4 (702065) 1.2 kg
Bracket for cantilevered mounting of Aluminum masts.

U Bolt

UBOLT (701460) 0.4 kg
Pair of UBOLTs for mounting Aluminum masts.

Guy Ring

GUYRING (710280) 0.1 kg
Allows guys to attach between FRP mast and Air Terminal.

Guy Kit

GUYKIT4MGRIP (701305) 4 m 0.4 kg
GUYKIT7MGRIP (701315) 7 m 0.7 kg
Guy kits for 4 m and 7 m vertical guy heights.

Downconductor Fixings

CONSAD/E2*(701990**) Saddle 0.19 kg CONSADFX (701410) Screw 0.01 kg
Stainless steel fixings to mount nVent ERICO Ericore.

*Supplied in USA/Asia as 1 pack of 5 saddles.
*Supplied in Europe each, order in multiples of 5.

Tower Saddles

CR37-2 (336430) Cable Clamp 0.04 kg
CR20-2 (336130) C Clip 0.1 kg
For fixing nVent ERICO Ericore to steel tower legs.
CR37-2 supplied in boxes of 50, CR20-2 in boxes of 100.

nVent ERICO System 3000

Cable Tie

CABTIE-SS (701420) 0.05 kg
520 mm stainless steel cable tie for strapping nVent ERICO Ericore to masts and other structures.

Lightning Event Counter

LEC-IV (702050) 2.0 kg
Installed on downconductor to record number of lightning strikes.

Adapter for Conventional Cable

TERMLUGCOUPL (701840) 0.1 kg
For connection of conventional downconductors to air terminals.

Mast Butt Adapter

INTCPT-ADBUTT (702296) 0.05 kg
Required to mount the nVent ERICO Interceptor Air Terminal into the FRP mast.

Water Pipe Adapter

INTCPT-AD2BSPF* (702297) 0.1 kg
INTCPT-ADF2NSP** (702298) 0.1 kg
For mounting Air Terminals to non-insulated water pipe masts

* 2" British thread
** 2" USA thread

Adapter to 3/4 thread

INTCPT-ADM3/4UNC (702299) 0.1 kg
Adapter to mount Air Terminal to conventional 3/4" lightning protection hardware.

Adapter to ER Series Masts

INTCPT-ADM116UN (702301) 0.1 kg
Adapter to mount Air Terminal to ER2-xxxx-SS non insulated masts.

FRP Masts

FRP2MBLACK (702040) 2 m Black 5 kg
FRP2MWHITE (702030) 2 m White 5 kg
FRP4.6MBLACK (*) 4.6 m Black 11.5 kg
Insulated upper mast section for air terminals.

* Not available in Europe.

Base Plate

MBFRP4.6M (*) 5 kg
Welded steel base plate for guyed installation of FRP4.6MBLK.

* Not available in Europe.

Aluminum Mast

ALUM3M (502000) 3 m 8.25 kg
ALUM4M (701370) 4 m 11 kg
ALUM5M (701380) 5 m 13 kg
ALUM6M (701390) 6 m 16 kg
Masts for cantilevered installations.

Aluminum Mast with Base

MBMAST3M (502040) 3 m 9.6 kg
MBMAST4M (701340) 4 m 12 kg
MBMAST5M (701350) 5 m 15 kg
MBMAST6M (701360) 6 m 17 kg
Mast with base for guyed installations.

Our powerful portfolio of brands:

CADDY ERICO HOFFMAN RAYCHEM SCHROFF TRACER

nVent

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ERICO-SB-E1290B-SYSTEM3000-UKEN-2304