



## **DISSIPATION ARRAY® SYSTEM (DAS®)**

Reliable Lightning Strike Prevention



### **Total Lightning Prevention**

The Dissipation Array System prevents direct lightning strikes within the area of protection.

### **Reduces Operating Costs**

Protects against lightning damage, including fires, destroyed electronics, and downtime.

### **Reliable**

Our No-Strike warranty ensures complete protection on all LEC supervised installations.

### **Universal**

Engineered to integrate with any building, tower, tank, stack or other structure.

### **Proven**

DAS technology has been in use since 1971, protecting thousands of sites worldwide.

# About DAS

**T**he Dissipation Array® System (DAS®) prevents direct lightning strikes by reducing the electric field to below lightning-collection levels, within the protected area. As a result, DAS helps to prevent downtime and loss of assets, while increasing personnel safety.

## Lightning Strike Prevention

Lightning is nature's attempt to equalize the voltage between storm clouds and the earth. In order for lightning to strike, it must connect to upward streamers, which reach up from earth-bound objects when the electrical field is strong enough. DAS interrupts the formation of these upward streamers through Point Discharge, a phenomenon where a well-grounded point exchanges ions between the air and the ground.

Point Discharge becomes more efficient when the points are connected to a low-impedance grounding system, and more ions can be transferred with a greater number of points. DAS technology takes advantage of these principles with an optimal point configuration able to interrupt the formation of upward streamers, thereby preventing direct strikes.

## Lightning Protection Components

The Dissipation Array System is a key component of your lightning protection system, working with grounding and surge suppression to achieve complete protection. A typical system includes:

1. The Dissipation Array, available in a range of configurations for almost any structure.
2. A low-impedance grounding system using chemically-charged electrodes (Chem-Rod®).
3. Transient Voltage Surge Suppression (TVSS) to protect against transients traveling through data lines and other conductive paths.

4. Modular strike prevention devices (SBI®) to supplement the Dissipation Array's area of protection as needed.

## Steps to Total Lightning Prevention

1. **Analysis:** During analysis, LEC consultants evaluate the site for factors that contribute to lightning events. Existing lightning protection systems are included in the evaluation.
2. **Design:** Engineers then specify system components, placement, and structural interfaces. Designs account for environmental factors such as wind, ice, and corrosion.
3. **Installation:** LEC offers installation supervision for all DAS installations.
4. **Certification:** LEC supervised installations receive our No-Strike warranty, with recertification available on a yearly basis.
5. **Expansion:** As your facility changes, LEC works with you to evaluate how your system is affected, ensuring uninterrupted protection.

## A History of Results

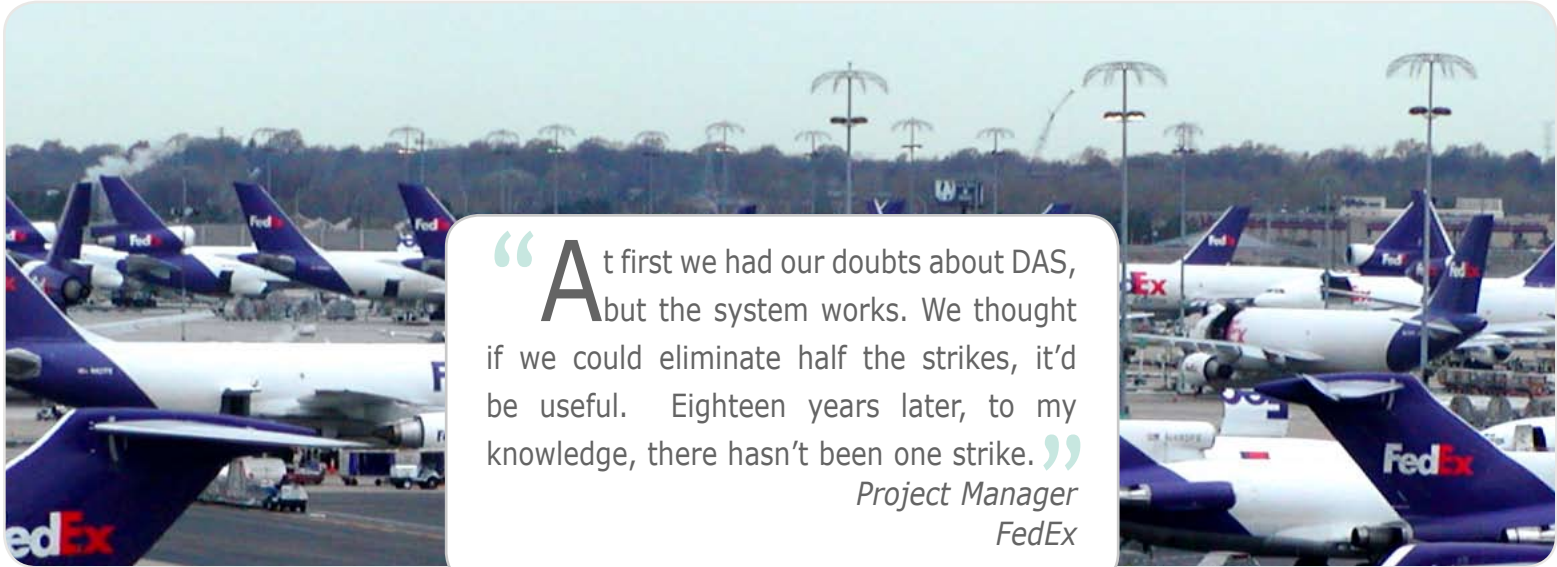
DAS technology was introduced in 1971. Since that time, over 3,000 systems have been installed worldwide, accruing over 40,000 system years. Throughout this time, the DAS has maintained a success rate over 99%.

“We have reduced electronic systems' maintenance by over 85% since installing the DAS 13 years ago. We now specify DAS for all building projects.”

*VP of Engineering  
Turner Broadcasting*







“At first we had our doubts about DAS, but the system works. We thought if we could eliminate half the strikes, it’d be useful. Eighteen years later, to my knowledge, there hasn’t been one strike.”

*Project Manager  
FedEx*

## Lightning Principles

Lightning is an electric discharge that attempts to equalize voltage between storm clouds and the earth. The difference in polarity between the bottom of the cloud and the ground is the charge differential. When this charge differential is high, the cloud begins to form downward leaders, and objects on the ground begin to form upward streamers. A leader then connects with a streamer, giving lightning the path it needs to exchange charge between the earth and the cloud, reducing the charge differential.

## What is Your Lightning Risk?

The chance that your facility will be hit varies on a number of factors such as location, structure height, temperature, and humidity. If all the factors are just right, even areas with infrequent thunderstorms can experience rare, but high intensity, lightning strikes.

Lightning can have devastating effects on any operation, whether taking a direct strike or being subjected to the secondary effects from nearby strikes. A single lightning strike to a mission-critical facility poses unacceptable risks which can cripple operations. These risks include fire, loss of product, damage to infrastructure, communications downtime, and loss of life.

## How Much will the Next Strike Cost?

In petrochemical facilities, lightning ignites fires that consume millions of dollars of product. The resulting downtime, environmental clean-up, repair, and community impact can be just as costly.

For power generation utilities, the effects can be equally troubling. Lightning may strike at any point on the grid, destroying expensive equipment and leaving customers in the dark.

Lightning also poses unacceptable risks for electronics and communication systems. Because a lightning strike causes an electromagnetic pulse (EMP), the result can be major equipment damage, critical data loss, and lost business opportunities. This risk is shared by data centers, emergency services, corrections facilities, government and military facilities, process manufacturing, and transport hubs but is often overlooked until too late.

Unlike antiquated lightning rod concepts, DAS prevents direct strikes, minimizing the risks to your operation. The benefits can be substantial: reduced maintenance costs, improved reliability, increased personnel safety, and a healthier bottom line.



## Dissipation Array Designs & Applications



### **Hemisphere Array**

Can be placed on any industrial or commercial structure, including poles, buildings, and towers.



### **Parapet Array**

For any commercial or industrial flat roof building with parapet around the edge.



### **Flat Roof Array**

For any flat roof building. May be used to supplement protection on a roof that has a parapet array.



### **Conic Array**

For cone roof and dome roof storage tanks. Commonly used in petrochemical and flammable storage industry.



### **Rim Array**

Designed for floating roof tanks used in petrochemical and flammable storage industry.



### **Stack Array**

Used on industrial smoke/exhaust stacks. Corrosion resistant designs available.



### **Trapezoid Array**

For use on industrial and commercial structures with guy ropes. Effective even if not the highest point.



### **Paragon Array**

Multiple Use Configuration. Variant commonly used on transmission & distribution lines.



### **And Many More...**

This is just a sampling of the most common DAS configurations. Our solutions can be engineered to fit any need.