

LIGHTNING DIVERSION SYSTEMS COMPANY OVERVIEW



Lightning Diversion for Aerospace, Defense and Wind Turbine Markets

Established in 1982, Lightning Diversion Systems (LDS) is a global leader in the design, development and production of segmented lightning diverter strips, suppressors and innovative lightning protection devices for the Aerospace and Wind Turbine markets.

LDS has developed and patented a number of unique Lightning Protection applications that have been adopted globally for Military and Commercial Aerospace applications, and Wind Turbine protection.

LDS products are flying today on thousands of in-service aircraft including F-15J, F-16, F-18, F-22, C-130, P-8 and numerous Boeing, Airbus, Embraer, Cessna, Gulfstream, Hawker, Lear Jet and Bombardier platforms as well as the Boeing 787 Dreamliner and the Airbus A400M.

Our products protect composite structures including nose Radomes and Antennas, and protect aircraft systems from current surges following a lightning event.

Our products also protect wind turbines across the globe with more than 3,000 wind turbine blades fitted with our segmented diverter strips. In addition, our latest wind turbine offering, ShockTape™ provides a novel and patented

approach with a laminate covering system that enhances a blade's existing LPS to provide more robust protection from lightning strikes.

LDS is AS9100:D and ISO 9001:2015 certified.



Segmented Lightning Diverter Strips

Lightning Diversion Systems is the pioneer and market leader in the design and manufacture of Segmented Lightning Diverter Strips and has stayed at the forefront of development to meet the needs of the full range of frequencies at which today's antennas operate.

Fourth generation diverter strips are currently available for the complete requirements of military and commercial fixed wing Aircraft, Rotorcraft and UAVs.

Segmented diverter strips provide maximum multiple-strike protection with negligible effect on RF pattern characteristics.

- Attached to an aircraft's radome or other structure, the system allows a lightning strike to travel safely and directly to ground in an ionized channel created in the air above the diverter strip.
- It combines permanent protection with low drag aerodynamics and has a negligible effect on radar antenna radiation patterns.
- The electrostatic shield created by the system provides a new source of streamers outside the radome wall to the fuselage.
- The resistance material in the strips help initiate the ionized channels and provides a bleed-off path for P-static.

- The small diameter of the disc segments makes the strips compatible with radar systems including Ku and Ka band antennas, and disc size can be modified for optimum antenna patterns at higher frequencies.
- Weight:
 - .012 Material Thickness
Measured: 8.2 grams per 3 ft. section
 - .005 Material Thickness
Measured: 5.4 grams per 3 ft. section
- Ease of Installation and Maintenance Cost with no holes drilled for installation to a radome, eliminating potential moisture problems.
- Benefits over solid diverter strips include fewer parts, easier installation with no drilling of holes, and no current flow in our segmented strips whereby you do not have electromagnetic effects from current flow in solid diverters or the physical damage from high current making right turn from a solid strip diverter to a bolt.
- Quality tested to DO-160 requirements.

Extensive testing indicates that the Lightning Diversion Systems strips will withstand current transfer greater than 200,000 amperes with little or no damage. (More than 99.5% of natural lightning strokes measured display peak current of less than 150,000 amperes.)



Surge Suppressors

Our compact Low Voltage/High Energy Surge Suppressors combine in one unit the low clamping voltage and high surge current capabilities needed to protect solid state power and electronic systems from severe lightning-induced and other over-voltage surges.

The suppressor is packaged to withstand rugged airborne and ground-based environments and will clamp repetitive high energy transients. It is designed for use in a wide variety of applications. These Surge Suppressors protect both 28V DC and 115V AC Systems.

The Low Voltage/High Energy Surge Suppressors operation has been verified for single pulse and multiple pulse (multiple stroke) environments. This assures the suppressor will provide protection in the multiple stroke lightning environments for aluminum structures (6 x 70 μ S wave-form), all composite structures (50 x 500 μ S wave-form), and mixed structures (40 x 120 μ S wave-form). The unipolar model is designed for DC power or signal circuits where the operating voltage is of only one polarity and surge voltages of the other polarity must be clamped to very low levels.

The Low Voltage/High Energy Surge Suppressors are especially suitable for clamping lightning-induced surges appearing on aircraft 28-volt DC power distribution busses feeding solid-state avionics. The suppressor clamps the high energy surges to levels easily tolerated by most solid-state power supply inputs without interruption of power or tripping of circuit breakers. Its surge current capability exceeds that of many spark-gap devices, and its response "turn on" time is virtually instantaneous.

We have a number of designed, tested and proven products to operate at determined surge conditions, or we can work with our customers to design a suppressor particular to their specific application.

The suppressors meet applicable requirements of RTCA DO-160, US MIL_STD-704, and most other aircraft power quality specifications.





LIGHTNING
DIVERSION
SYSTEMS

Conformal Lightning Shields

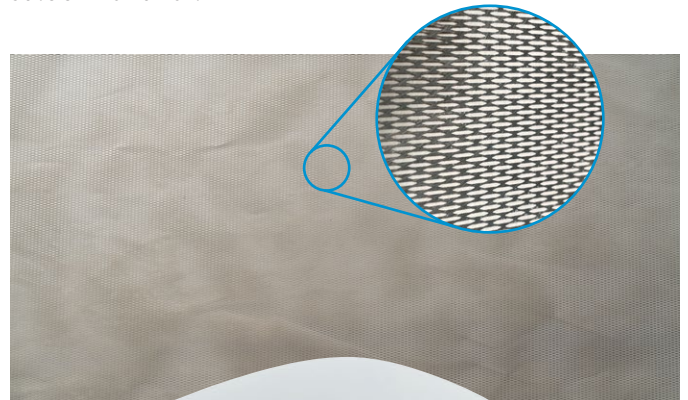
Lightning Diversion Systems has developed thin aluminum or copper conformal shields. The shields were developed for use as an exterior surface for composite laminates. For graphite epoxy laminates, copper shields are nickel plated to ensure a compatible barrier between the graphite and the aluminum or copper.

These shields offer protection to conductive composites from direct or indirect lightning effects. The shields are lightweight with a smooth finish and stretch to conform over detailed shapes, as opposed to many less-desirable methods currently available. End-use applications such as UAVs benefit from protection to composite laminate surfaces with complex curvatures.

Dimensions: We manufacture these shields in sheets of 24" x 26" panels.

Coatings: Thin nickel coating is offered to prevent corrosion.

Materials: Conformal Shields are offered in aluminum and copper materials, ranging in various thicknesses beginning at .001 inch thick.



For inquiries & orders, contact Lightning Diversion Systems,
or go to LightningDiversion.com

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