

# TerraStat®

## *Point Discharge Terminals*

ALLTEC Corporation offers a complete line of Lightning Dissipation Terminals, which utilize the Point Discharge Principle to mitigate direct lightning strikes. The following pages display our line of TerraStat® Dissipation Terminals, that were designed to protect anything from the tallest broadcast towers to the smallest scada system.

ALLTEC TerraStat Terminals are the latest design in dissipation products. These terminals help to prevent direct lightning strikes by dissipating static electrical charge into the atmosphere through the process of ionization. This process reduces overall facility charge concentrations, lowering probabilities for the formation of streamers. Since streamers complete the actual path of the lightning strike, the likelihood of a direct lightning strike to your structure is significantly reduced. As a storm cloud builds, static electrical charges in its lower portion induce opposite charges on earth and its structures. When the induced charge accumulates, streamers may form and invite direct strikes.

TerraStat Dissipation Terminals incorporate small electrodes that break down into corona long before streamers can form, thereby lowering accumulated charge on the structure and postponing streamer generation. Non-protected objects take over the streamer generation role. Their likelihood of being struck is high, compared to the TerraStat-protected site. Many of our TerraStat Dissipation Terminals are designed to be included in UL 96A Master Label lightning protection systems. We offer a standard Vertical Dissipation Terminal (TS-100) for use in most building applications. For structures or equipment with a high susceptibility to lightning strikes, our TS-400 Series have four times the protection of our standard vertical dissipation terminal.

ALLTEC Corporation also manufactures a complete line of TerraStat Dissipation Terminals (TS-500 & TS-510) designed specifically for broadcast and communications towers, high mast lighting, and other high risk structures. Whatever your requirements, we have a product to fit the application. For special applications, we have the capabilities to design, manufacture and install a custom system to fit your needs.

## *Dissipation Theory*

### How it works

Lightning is an electrical discharge, at enormous voltage, that attempts to equalize charge imbalances created by a thunderstorm. Whether that imbalance occurs between two clouds, two different areas in the same cloud, or a cloud and the opposite charges induced on the earth, a point discharge system works by reducing that imbalance.

While scientists still have much to learn about thunderstorms and how they work, electrical charges in thunderstorms are generally thought to be created by combinations of thermal, mechanical and chemical interactions. In basic electrical theory, any charge imbalance is called static electricity. Electrostatics, defined as the field of physics dealing with phenomena due to attractions or repulsions of charges, is exemplified by a thunderstorm buildup and resulting lightning strike. Lightning is Nature's electrical recombination of separated electrical charges. An electrical charge in the cloud and an induced, opposite charge on the ground, will be attracted to each other. Once this attraction (voltage) becomes strong enough to overcome the insulating qualities of the atmosphere, lightning follows.

(See Fig.1)