

LDU offers a family of air terminals and accessories. The product design is based upon most recent advances in the field whilst maintaining proven principles associated with the success of the past.

The PREVECTRON system provides a purpose designed package for direct lightning protection.

HOW IT WORKS

The PREVECTRON 2 Early Streamer Emission air terminal gathers energy from the naturally occurring ambient electrical field, which builds up considerably – as much as several thousand volts per meter – when a storm approaches.

The lower series of energy collecting electrodes allows electrical energy to be stored within the trigger device.

Just before the lightning strikes, there is a sudden and rapid increase in the electrical field and this is detected by the air terminal. This information is sent to the electrical triggering device, which, in turn, releases the stored energy in the form of an ionization at the tip of the air terminal.

PRINCIPLES

The ionization at the tip of the air terminal is characterised by:

Control over the release of ions;

The PREVECTRON 2's triggering device allows the ions to be fired within a very short space of time. The remarkable accuracy of the triggering system means that the ions are released at precisely the right moment, in other words, a split second before the lightning strike.

Triggering of the Corona effect;

The presence of a large number of initial electrons coinciding with the sharp increase in the electrical field allows the natural CORONA effect triggering time to be reduced.

Anticipation of the upward leader;

The PREVECTRON 2 is designed to generate an upward leader from its tip earlier than those generated by other nearby high points. This means that the PREVECTRON 2 becomes the preferred point of impact for the lightning within the protected area. When measured in a laboratory, this gain in triggering time is defined as a measurement of time, and represents a measure of the effectiveness of the PREVECTRON 2 air terminal when compared to a single rod.

RESEARCH AND DEVELOPMENT

INDELEC is the only company to conduct on-site testing in real-life lightning conditions on its products and has done so for several years. The tests were developed closely with a team from the French Atomic Energy Commission (Grenoble, France) who are experts in triggering lightning.

A number of test campaigns, providing a wealth of useful information, were carried out at Camp Blanding in Florida, USA, and at Saint Privat d'Allier, France.

Some of the most revealing findings include:

The extent to which the PREVECTRON's effectiveness was demonstrated by measuring and comparing the electrical activity at the tip of several air terminals

Details of the way the PREVECTRON's triggering system worked

Proof of its ability to withstand real lightning discharges by analysing a PREVECTRON which had been subjected to numerous lightning strikes.