

Application

The composition and function of the lightning rod for pre-discharge:

Each pre-discharge lightning rod is composed of five parts: the central main needle, the upper side needle, the stainless steel airtight box, the electric trigger device, and the lower side wings. The number of side needles and side wings depends on the specific model. There are 3 and 6 respectively. classification.

The role of the central main needle: through the reliable connection with the lightning rod support rod (down-conductor) and the earth, a complete lightning channel is formed, and the lightning current is introduced into the earth, thereby protecting the surrounding buildings and people.

Upper side needle: Form advance pilot through the CORONA effect with the central main needle.

Stainless steel airtight box: used to protect the internal electric trigger device, and at the same time play a role in waterproof and dustproof.

Electrical triggering device: After processing the energy collected by the lower flank, the CORONA effect is formed between the central main needle and the upper side needle, and finally triggered to form an advance pilot.

Lower flanks: used to collect the energy generated by lightning at an instant.

Working principle of pre-discharge lightning rod:

When a lightning cloud layer is formed, the atmosphere between the cloud layer and the ground will form an electric field, the electric field strength can reach thousands or even tens of thousands of volts per meter, so that corona discharges begin to appear on the raised parts of the ground or metal parts .

When a descending leader is formed inside the lightning cloud layer, the lightning strike begins, and the descending leader develops towards the ground in a ladder form .

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When the descending leader develops to a certain height above the ground, the raised part or metal part on the ground produces an ascending leader, which propagates upwards and eventually merges with the descending leader to form a lightning connection. At this time, the lightning current flows through the formed channel . A single building on the ground may generate multiple ascending pilots, and the first ascending pilot that first meets with the descending pilot determines the location of the lightning strike.

The principle of REAZY-ESE series lightning rods in advance is to form a faster and earlier upstream pilot than ordinary lightning rods, and to receive lightning in advance, thereby forming protection for other parts of the building.



Pre-lead generation

When the thunderstorm comes, the energy in the thundercloud is huge (the electric field strength can reach tens of thousands of volts per meter), the REAZY-ESE pre-discharge lightning rod absorbs energy from the natural electric field through the lower end of the flanks and stores it in the electric trigger device.

Before lightning occurs, the electric field strength will increase rapidly (up to tens of kilovolts per meter). When the stored energy reaches a certain level, the electric trigger device will be activated, causing a spark discharge between the central main needle and the upper side needle. Ionize the air around the tip to form a tip discharge phenomenon.

The existence of a large number of initial electrons formed by the sharp-point discharge phenomenon rapidly forms an upward discharge channel that is earlier than the adjacent high point immediately before the occurrence of the main lightning, that is, it leads in advance.

Advantages of early discharge lightning rod products:

Fully active system, with pre-discharge function, pre-discharge time can reach more than 60US.

Under the same installation height, it has a larger protection range than traditional Franklin lightning rods.

Flashing in advance reduces the steepness of the lightning current wave head.

The central main needle directly penetrates the earth and meets the requirements of GB50057-2010.

Stable work, not restricted by environmental conditions, and can work under harsh environmental conditions such as thunderstorms.

The air-termination accuracy is high, which reduces the probability of lightning strikes of the protected building.

Only active before the arrival of thunderstorms, it is non-radioactive and does not pose any threat to the surrounding environment.

With a wide range of protection radius and different product models to choose from, to meet the needs of various buildings and various projects.

Patented products are protected by national intellectual property rights.

It is safe and reliable, and has been tested in the high-voltage laboratory of the Beijing Lightning Protection Device Test Center.

Calculation of the protection radius of the lightning rod product in advance:

According to the latest standard NFC17-102_2011, the REAZY-ESE

Main technical para.

Model	REAZY-ESE40
Pre-discharge time(ΔT)	40 μ s
Uplink lead distance (ΔL)	40M
Lightning impulse discharge current	$\geq 200KA$ (10/350 μ s)
Wind strength	$\geq 40m/s$
Rod length mm	390
Upper side needle, lower side wing	6 pair
Weight	4.0KG
Protective radius	As table
Advantage	Pre discharge
Material	304 stainless steel / copper
Installation method	Threaded connection, with self-locking function to prevent slippage
Reference standard	French NFC17-102 (2011)
Appendix	Lightning strike counter, early discharge lightning rod tester (optional)

