# Simple,reliable

# Active 1D® and autonomous

## Early Streamer Emission lightning rod

## Principle and operating

The ***Active 1D®*** excitation advance is obtained by a device named « impulse device ». Its principle consists in storing electrostatic energy present in the atmosphere at a stormy cloud approach to release the ascending discharge excitation in a good time.
This device operates with an integrated sensor which measures the surrounding electrical field value.
It generates then a polarity inversion of the lightning rod head, creating a sudden amplification of the electrical field on its point.

## *Active 1D®* characteristics

- Consideration of the energy character to choose the streamer able to become an ascending leader,
- Autonomous and clean energy source : atmospheric electrical field,
- Cloud polarity consideration,
- Optimized head bending radius to reduce the corona effect and guarantee the excitation advance,
- Guarantee of functioning in all weather conditions,
- High resistance to corrosion thanks to its manufacture in 304 L stainless steel,
- In compliance with NFC 17-102 standard of September 2011

## *Active 1D®* radii of protection

The ***Active 1D®*** has been tested in laboratory according to NFC 17-102 standard protocol.

**These tests showed, according to models, excitation advances from 12 µs to 60µs regarding to a simple rod.**

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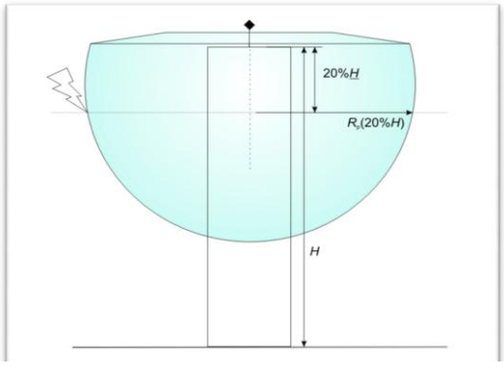
## Enhanced protection zone

The *Active* 1D® radii of protection here below mentioned, are defined for the four Np levels of protection (from I to IV) regarding to h real height between the lightning rod point and the highest point of the structure to protect.




ΔT : Excitation advance, for *Active* 1D®, ΔT=12, 25, 45 and 60µs

- Np : level of protection with more or less severity (I to IV) determined by
- the lightning risk assessment with the Lightning Risk software according to NFC 17-102 standard,

- h(m) : height between the lightning rod point and the highest point of the structure to protect.

| Active 1D® | AFB10121D | | | | AFB10251D | | | | AFB10451D | | | | AFB10601D | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| h (m) \ Np | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV |
| 2 | 11 | 13 | 16 | 19 | 17 | 20 | 23 | 26 | 25 | 28 | 32 | 36 | 31 | 34 | 39 | 43 |
| 4 | 23 | 27 | 32 | 37 | 34 | 39 | 46 | 52 | 51 | 57 | 65 | 72 | 63 | 69 | 78 | 85 |
| 5 | 28 | 34 | 41 | 46 | 42 | 49 | 57 | 65 | 63 | 71 | 81 | 89 | 79 | 86 | 97 | 107 |
| 6 | 29 | 34 | 42 | 48 | 43 | 49 | 58 | 66 | 63 | 71 | 81 | 90 | 79 | 87 | 97 | 107 |
| 8 | 30 | 36 | 43 | 50 | 43 | 50 | 59 | 67 | 64 | 72 | 82 | 91 | 79 | 87 | 98 | 108 |
| 10 | 30 | 37 | 45 | 52 | 44 | 51 | 61 | 69 | 64 | 72 | 83 | 92 | 79 | 88 | 99 | 109 |
| 20 | 32 | 41 | 51 | 60 | 45 | 54 | 65 | 73 | 65 | 74 | 86 | 97 | 80 | 89 | 102 | 113 |
| 30 | 32 | 42 | 55 | 65 | 45 | 55 | 68 | 80 | 65 | 75 | 89 | 101 | 80 | 90 | 104 | 116 |
| 60 | 32 | 42 | 57 | 72 | 45 | 55 | 70 | 85 | 65 | 75 | 90 | 105 | 80 | 90 | 105 | 120 |

- ***Active* 1D® range**

| Model | ΔT (µs) | Lightning counter |
|---|---|---|
| AFB10121D | 12 | Not included |
| AFB17121D | 12 | Included |

| Model | ΔT (µs) | Lightning counter |
|---|---|---|
| AFB10251D | 25 | Not included |
| AFB17251D | 25 | Included |

| Model | ΔT (µs) | Lightning counter |
|---|---|---|
| AFB10451D | 45 | Not included |
| AFB17451D | 45 | Included |

| Model | ΔT (µs) | Lightning counter |
|---|---|---|
| AFB10601D | 60 | Not included |
| AFB17601D | 60 | Included |


Lightning counter
AFV0907CF

## *Active* 1D® *test*

The ***Active*** 1D® can be tested on site with AFV0050TT wire test case (initial check, periodical checks according to NFC 17-102 standard and decrees in force, maintenance,…)
Simple and fast, this test can be done either disassembling the lightning rod, either using the AFV0087PT test perch, to check lightning rods at a height of 8 meters without dismantling.

This tester power supply operates with a battery (provided). The display with indicator lights indicates instantly the obtained result (positive or negative).

Wired tester
AFV0050TT

## Packing

Complete lightning rod packed in reinforced cardboard box
- Weight : 3,00 Kg
- Dimensions : 430 x 110 x 110 mm

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