

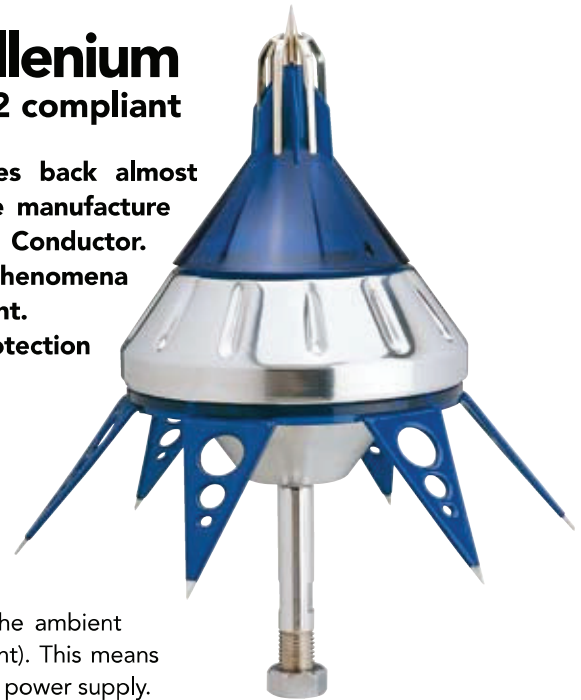


Early streamer emission lightning conductors

www.banhay.com - Hotline 24/7: +84 986 219 626 / +84 903 070 686; info@banhay.com
No 25, Lane 179/64, Vinh Hung Str., Hoang Mai Dist, Hanoi, Vietnam

Prevectron®2 Millenium French standards NFC 17-102 compliant

INDELEC's reputation in the field of lightning protection dates back almost sixty years. Since 1986, the company has invested heavily in the manufacture of its PREVECTRON® Early Streamer Emission Lightning Conductor. This has involved both fundamental research into the physical phenomena associated with lightning, as well as extensive products development. The latest Prevectron® 2 Millenium series provides optimal protection against the direct effects of lightning.



Operation

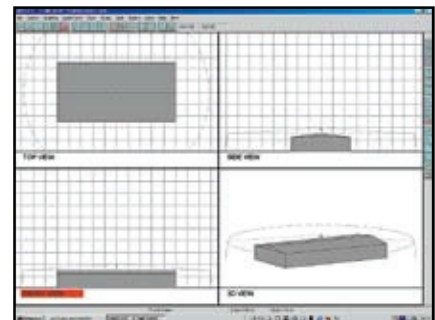
The Prevectron® 2 is operating in three stages :

- The ionization device is charged via the lower electrodes using the ambient electrical field (several million volts/meter when storms are prevalent). This means the Prevectron® 2 is a fully autonomous system requiring no external power supply.
- The ionization phenomenon is controlled by a device which detects the appearance of a downward leader: the local electrical field increases rapidly when a discharge is imminent. The Prevectron® 2 detects changes within the field, making it the first E.S.E. air terminal to react at the precise moment the downward leader develops from the cloud to the ground.
- Early triggering of the upward leader using a system of spark ionization between the upper electrodes and the central tip. The Prevectron®2's ability to trigger an upward leader ahead of any other protruding point within the protected area ensures it will be the preferential point of impact for the lightning discharge.

Key benefits

The skills of INDELEC's engineers, the variety of tests carried out in both high-voltage laboratories and real-life lightning conditions, and the experience gained from the several dozens of thousands of PREVECTRON® 2 installations around the world, have allowed us to develop a complete range of lightning conductors offering a host of key benefits :

- 8-model range offering customized solutions for each project (aesthetic constraints, required protection area, etc.);
- fully autonomous operation;
- total reliability, even in extreme climatic conditions;
- proven, robust design able to withstand multiple lightning strikes;
- lightning conductor only becomes active when electrical field intensity rises (lightning discharge likely), the PREVECTRON® 2 presents no danger to the site;
- straightforward installation and maintenance using tools specially developed by INDELEC, including protection calculation software, strike counter and Prevectron® 2 tester;
- high-voltage laboratory test results available on request;
- ultra-safe capture tip thanks to full electrical continuity between the tip and the earth point;
- ISO 9001-2000 manufacturing process;
- Fully testable on site.



Calculating the protection area using Indelec's **Protec 2001**® software.

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Prevector[®]2 Millenium T

available for S 3.40 T,
S 4.50 T,
S 6.60 T.

Self testing

The self-testing PREVECTRON[®]2T lightning conductors allows to check that the triggering device is operating properly without having to access to the lightning air terminal.

It consists of a test circuit integrated into the lightning conductor, and an external solar energy and communication module fastened to the base of the central rod.

The test is initiated from the ground or from the roof terrace, at a maximum distance of 50 m, using a dedicated remote control unit.

The PREVECTRON[®] 2 T lightning air terminals indicates its operational status itself by lightning up powerful LEDs located under the stainless steel casing.

Characteristics

- After a self-check cycle, the result of the test appears spontaneously.
- The procedure is triggered remotely.
- The analysis result is observed directly on the lightning conductor.

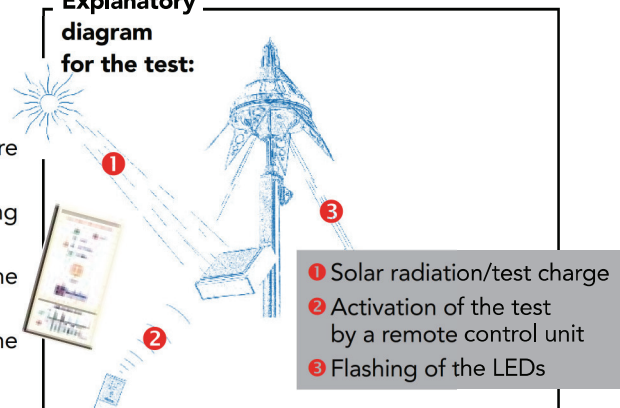
Advantages

- The power supply circuit for the test does not require a battery because energy is provided directly by the solar panel. Consequently the lightning conductor does not require any additional maintenance or periodic disassembly, which is essential for replacing a battery.
- The product's lifetime is not limited by the additional test circuit.
- The test can be carried out during daytime within a wide outdoor temperature range.
- Only the triggering of the test is carried out by remote control, guaranteeing the system's reliability.
- The communication module is in a separate enclosure underneath the PREVECTRON[®] 2 T and has reinforced EMC protection.
- The protection performance characteristics of the PREVECTRON[®] 2 T and the radius remain unchanged.
- Universal remote control unit for all types of self testing PREVECTRON[®] 2 T.



Dimensions
of the solar panel:
10 x 10 x 3.5 cm

Explanatory diagram for the test:



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The range

S SERIES

PREVECTRON® 2 MILLENIUM

Ø 185 mm / H = 385 mm

S 6.60

S 4.50

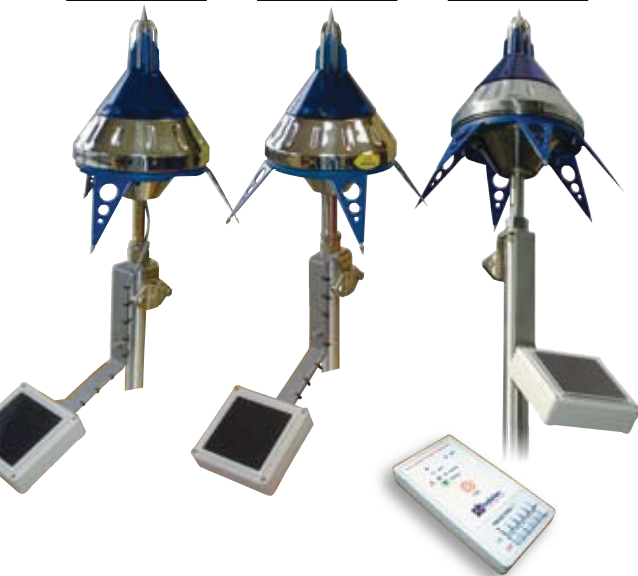
S 3.40



S 3.40T

S 4.50T

S 6.60T



Model	S6.60 T	S6.60	S4.50 T	S4.50	S3.40 T	S3.40
ΔT (μs)	60	60	50	50	40	40
Weight (kg)	6.4	5.6	6.3	5.5	6.2	5.4
Ref.	P1243T	P1243C	P1233T	P1233C	P1223T	P1223C
Can be tested*		•		•		•
Self-testing**	•		•		•	

Ref of the remote control for self-testing Prevectron P1291T

TS 2.10

TS 2.25

TS 3.40

TS SERIES

PREVECTRON® 2 MILLENIUM

Ø 100 mm / H = 330 mm



Model	TS2.10	TS2.25 MH	TS2.25	TS3.40	TS3.40 HM
ΔT (μs)	10	25	25	40	40
Weight (kg)	3.2	3.3	3.3	3.4	3.4
Ref.	P1205C	P1206C	P1204C	P1213C	P1214
Can be tested*	•	•	•	•	•

TS 2.25MH

* Testing non self-testing models will oblige the removal of the lightning air terminal and the use of PREVECTRON®2 tester HV.
** for self-testing models, only a remote control is needed.

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Protection radius

Protection Level I

h (m)	2	3	4	5	10	h (m)
S 6.60	31	47	63	79	79	S 6.60T
S 4.50	27	41	55	68	69	S 4.50T
S 3.40	23	35	46	58	59	S 3.40T
TS 3.40	23	35	46	58	59	TS 3.40MH
TS 2.25	17	24	34	42	44	TS 2.25MH
TS 2.10	10	15	21	26	42	

Protection Level II

h (m)	2	3	4	5	10	h (m)
S 6.60	34	52	68	86	88	S 6.60T
S 4.50	30	45	60	76	77	S 4.50T
S 3.40	26	39	52	65	67	S 3.40T
TS 3.40	26	39	52	65	67	TS 3.40MH
TS 2.25	19	29	39	49	51	TS 2.25MH
TS 2.10	12	19	25	31	34	

Protection Level III

h (m)	2	3	4	5	10	h (m)
S 6.60	39	58	78	97	99	S 6.60T
S 4.50	34	52	69	86	88	S 4.50T
S 3.40	30	45	60	75	77	S 3.40T
TS 3.40	30	45	60	75	77	TS 3.40MH
TS 2.25	23	34	46	57	61	TS 2.25MH
TS 2.10	15	22	30	38	42	

Protection Level IV

h (m)	2	3	4	5	10	h (m)
S 6.60	43	64	85	107	109	S 6.60T
S 4.50	38	57	76	95	98	S 4.50T
S 3.40	33	50	67	84	87	S 3.40T
TS 3.40	33	50	67	84	87	TS 3.40MH
TS 2.25	26	39	52	65	69	TS 2.25MH
TS 2.10	17	26	34	43	49	

Prevectron®2 Tester

Characteristics

The PREVECTRON®2 test box is designed to check that the main functions of the PREVECTRON®2 are working properly and that none of the vital components is damaged.

The PREVECTRON® 2 test box is powered by 4 LR6 batteries for total portability making it ideal for both installation and routine maintenance purposes, since mains power is unnecessary.

Tests are made with same measures as during real-life lightning conditions, providing security to the user. Results are given by both light and ringing warning signal.

Supplied with isolated cables and transport and storage box.



Product ref : P 1290 C