

Satelit 3



DUVAL MESSIEN

LA MAÎTRISE DE LA Foudre
HIGH TECH FOR LIGHTNING PROTECTION



Satelit 3

The Early Streamer Emission Lightning Conductor Including TeleTesting supervision

The latest lightning protection solution developed by Duval Messien uses state-of-the-art technology incorporated in the Early Streamer Emission lightning conductor **Satelit 3**. This third generation of the Duval Messien «Satelit» range uses this technology to force the lightning strike to follow a predetermined path towards the earthing system.

As opposed to a Simple Rod Lightning Conductor, the **Satelit 3** concept consists of polarising the lightning conductor tip with a voltage of between 35 kV and 45 kV, synchronised with the progress of the descending tracer, and of triggering an anticipated start for the ascending tracer.

Being always at the leading edge of technological advances, with its **Satelit 3** Duval Messien is once again offering a ground-breaking development by introducing a remote system testing facility: the **TeleTester-S3**, thus providing a truly remarkable lightning protection solution with the **Satelit 3** system.

The **Satelit 3** range comprises three models with different performance characteristics: the **Satelit 3-25**, the **Satelit 3-45** and the **Satelit 3-60**.

Satelit 3 : A NEW LIGHTNING CONDUCTOR CONCEPT

In accordance with the procedure detailed in the French standard NF C 17-102 dated July 1995, the range of lightning conductors has been the subject of in-depth research and numerous tests in internationally recognised approved laboratories.

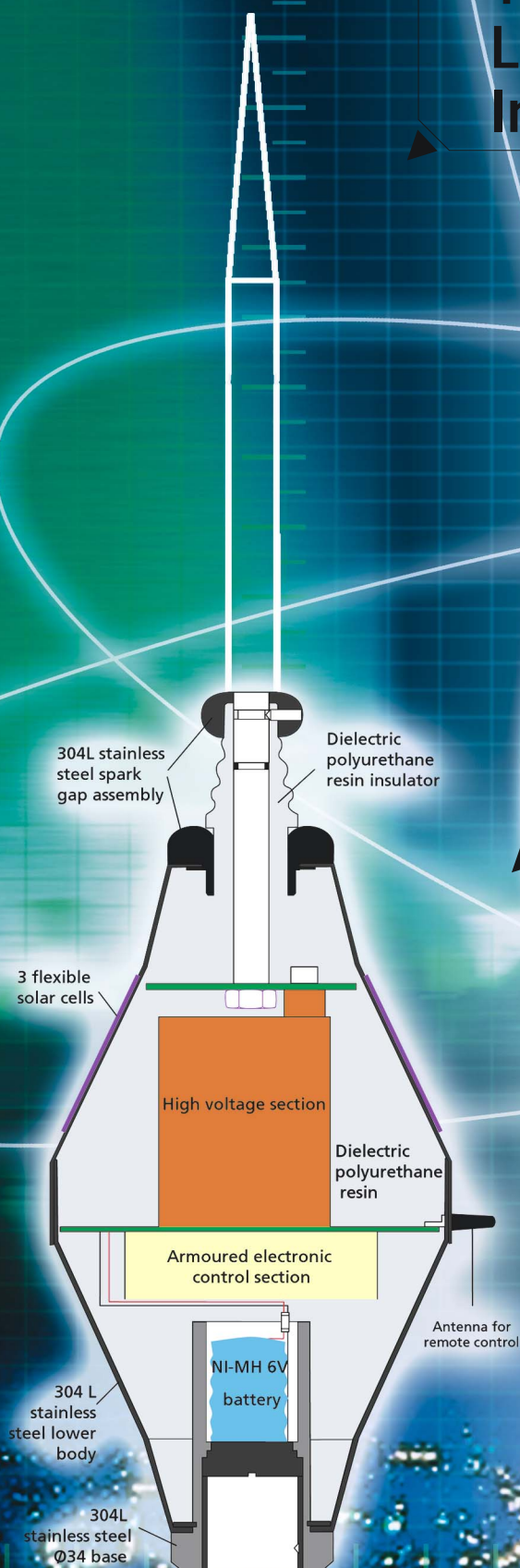
- **Satelit 3** has been designed around a 304L quality stainless steel shell in order to guarantee high resistance to impacts, corrosion and chemical agents (hydrocarbons, acids...). It is perfectly suited for installation in chlorinated environments, in high humidity climates or in exposed industrial sites.

- The electronic components selected for the **Satelit 3** are completely protected inside an inert resin block. The spark gap, made of solid stainless steel, is designed to conduct currents greater than 180 kA.

- The **Satelit 3** is powered by a NI-MH type battery, continuously recharged by three indestructible, flexible solar cells, specially developed for Duval Messien. The heated encapsulation process used in manufacturing them ensures excellent tightness as well as improved protection against damage. The faces of each cell are made of Ethylene Tetra Fluoro-Ethylene (ETFE) co-polymer material. As well as being adhesion resistant, it does not turn yellow or crack up over time.

Satelit 3 CHARACTERISTICS

TIP AND BODY: 304L STAINLESS STEEL
WEIGHT: 4 KG.



TeleTester-S3

To ensure maximum safety and ease of use, the Early Streamer Emission lightning conductor **Satelit 3** can be tested remotely, via radio signals, with the new **TeleTester-S3**.

The **Satelit 3** has an on-board transmitter using a standard frequency and transmitting a signal every 90 seconds to confirm the correct operation of the lightning conductor's electronics, including the polarisation of its tip. The **TeleTester-S3** receives the information transmitted by the **Satelit 3** and emits an audible signal confirming that the installation is fully functional.

THIS CHECK CAN BE PERFORMED UP TO A DISTANCE OF 50 M BETWEEN THE **Satelit 3** AND THE **TeleTester-S3**.

In the field of lightning protection, the purpose of this innovating way of checking is to:

- LIMIT THE NUMBER OF ON-SITE INTERVENTIONS.
- RAPIDLY CHECK THE **Satelit 3** LIGHTNING CONDUCTOR'S CONDITION AND ITS CORRECT OPERATION.
- AVOID RECOURSE TO COSTLY AERIAL EQUIPMENT ON SITES WITH DIFFICULT ACCESS.
- GUARANTEE OPTIMUM PROTECTION AGAINST THE EFFECTS OF LIGHTNING, BY ITS SIMPLICITY OF OPERATION.
- ENABLE MAINTENANCE INTERVENTIONS TO BE RAPIDLY DEPLOYED.



PROVEN PERFORMANCE

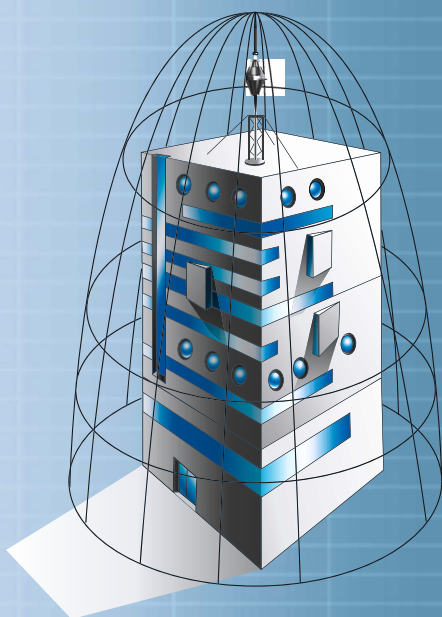
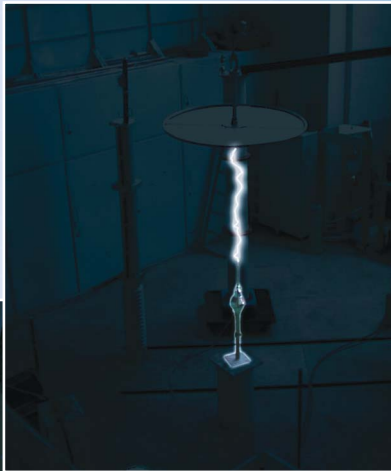
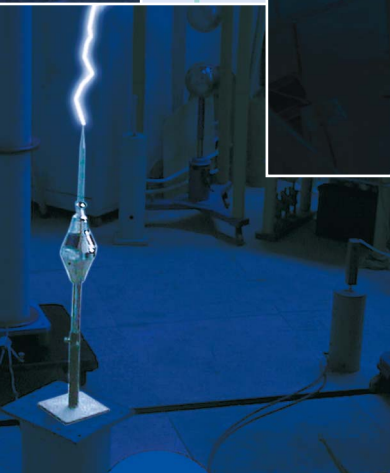
In order to meet both the requirements of existing legislation and the demands of the domestic and international markets, Duval Messien has conducted extensive research and rigorous testing in perfecting the **Satelit 3** lightning conductor (in accordance with the NF C 17-102 standard).

Trials of **Satelit 3** lightning conductors have been conducted in various countries by independent, approved laboratories, as well as in France at the Bazet Test Centre (COFRAC approved) under Lloyd's Register control (the certifier European body).

TeleTester-S3 CHARACTERISTICS

- CASING:** ABS 170 mm x 85 mm x 34 mm (IP54)
WEIGHT: 200 gr
OPERATING FREQUENCY: standard
POWER SUPPLY: 9 volts batteries, PP3 type





The **SATELIT 3** protection radii (R_p) are calculated according to the formula defined in the French Standard NF C 17-102 dated July 1995 according to the lightning conductor triggering advance (ΔT), its height (h) and the level of protection required (N_p).

Satelit 3 RANGE

Protection radii (m)										
Type	h = tip height (m)									
SATELIT3	2	3	4	5	6	10	15	20	45	60
Level 1										
Satelit 3-25	17	25	34	42	43	44	45	45	45	45
Satelit 3-45	26	38	50	63	63	64	65	65	65	65
Satelit 3-60	32	48	64	79	79	79	80	80	80	80
Level 2										
Satelit 3-25	23	34	46	57	58	61	63	65	70	70
Satelit 3-45	34	48	64	81	81	83	85	86	90	90
Satelit 3-60	40	59	78	97	97	99	101	102	105	105
Level 3										
Satelit 3-25	26	39	52	65	66	69	72	75	84	85
Satelit 3-45	36	50	72	89	90	92	95	97	104	105
Satelit 3-60	44	65	87	107	107	109	111	113	119	120

PRINCIPLE OF A TYPICAL INSTALLATION

One or several **Satelit 3** lightning conductors are required to protect a structure or a zone, depending on the surface area to be protected and the level of protection required.

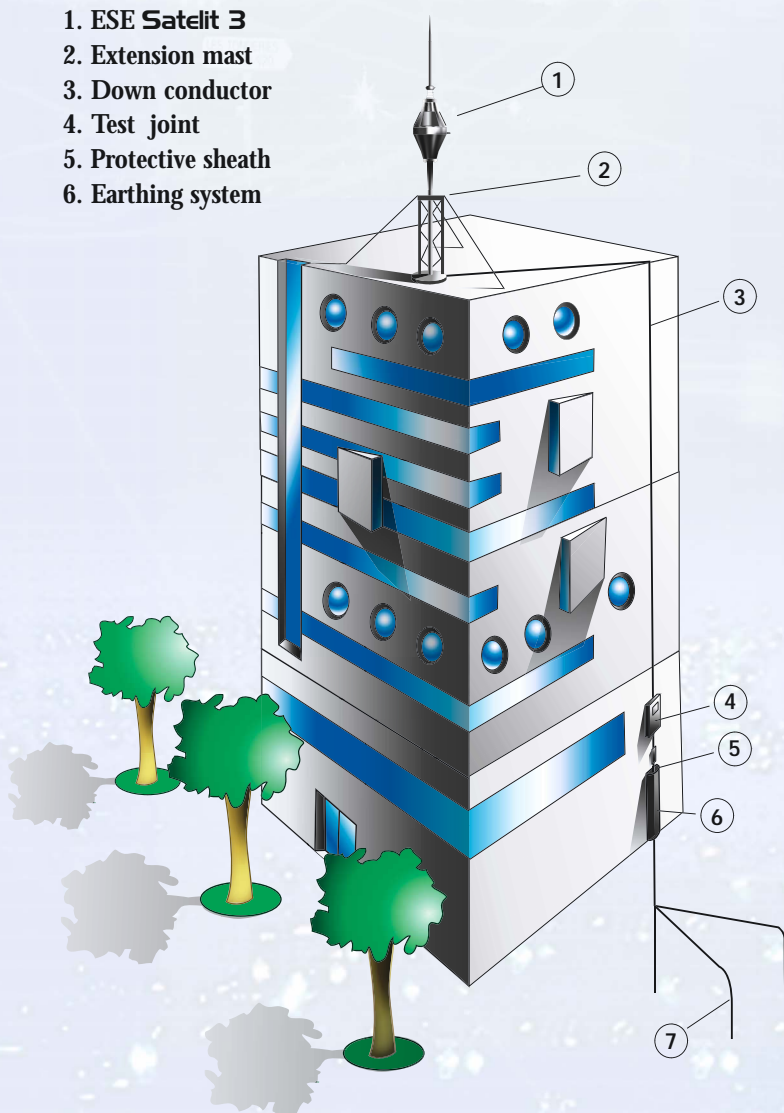
Each **Satelit 3** lightning conductor is located on a high spot so as to clearly dominate the building, zone or structure to be protected (at least 2 meters). The choice of the model is a function of the required performance (see page 4).

Each **Satelit 3** lightning conductor is connected directly to earth by one or several standard down conductors. All metal masses located inside the security distance must be connected equipotentially.

In accordance with the standards in force, the down part of each conductor must be equipped with a test joint, a protective sheath and eventually a lightning strike counter.

The design of the earthing system must be suited to the lightning current to be dissipated. It must be equipotential with the earth connections of the electrical installations.

1. ESE **Satelit 3**
2. Extension mast
3. Down conductor
4. Test joint
5. Protective sheath
6. Earthing system



DUVAL MESSIEN A CENTURY OF INNOVATIONS

The art of innovation is not innate. Acquiring the right product, at the right time, corresponding to market demand, can only be achieved by following a rigorous «Research and Development» process. Innovating is an indispensable investment for ensuring our long term future, our product and service quality, our brand image and consequently, our customer satisfaction.

Down through the years, technological innovation has always been one of the cornerstone values of the Duval Messien company, dedicated to providing successful, reliable and safe solutions to physical phenomena associated with lightning and electrical energy.

The origins of this success are to be found in the union of two great talents: that of Paul Duval, in 1835 the forerunner of the manufacture of braided flexible cables, with that of Georges Messien who, as early as 1927, dedicated all his energies to studying the phenomena of earthing systems. As a prolific inventor, Georges Messien filed a whole series of patents in order to develop and improve new electrical protection procedures. In 1952, from this merging of talents, the Duval Messien Company was founded. Today, it is recognised as one of the world's leading experts in the field of lightning protection.



DUVAL MESSIEN, SPECIALIST IN «GLOBAL PROTECTION»

Our objective is to continue being a leading edge company, capable of offering all that is best in our two spheres of expertise, being the design of earthing solutions and lightning protection systems. On this market, our Company can currently offer a «Global Protection» service, starting with studies and consulting services, then the complete provision of guaranteed and certified systems, with on-site installation and maintenance contracts provided by our national and international network. Duval Messien, benefiting from ISO 9001 and Qualifelec certification and MASE approval, has 2 operational units in France: Chennevières-Sur-Marne, in the Val-de-Marne area where its head office, France and Export sales offices and its technical and studies departments are located, and Velaux in the Bouches du Rhone area where its Research and Development and production departments are located.



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DUVAL MESSIEN, A TRULY INTERNATIONAL BUSINESS

Our ability to innovate allied with our resources in terms of Research and Development, manufacturing and marketing have enabled us to become one of the world's leading businesses in the domain of lightning protection.

With an international presence spanning several decades, Duval Messien has an unfailing determination to pursue the sales development of its protection technologies and to provide technical assistance for its customers.



Thus, the standardised range of Early Streamer Emission lightning conductor Satellit is available worldwide via a vast network of exclusive professional distributors.

Over the last twenty years, for all types of buildings at risk, both industrial and private, the Duval Messien know-how has been proven in numerous countries: throughout Southern Europe and the Mediterranean Basin, in the countries of



North Africa and the Middle East, in Latin America, in North America, in Southern Asia and in China where Duval Messien has a subsidiary company.

