



# LIGHTNING MANAGEMENT SYSTEM



LMS TRON ESE 60



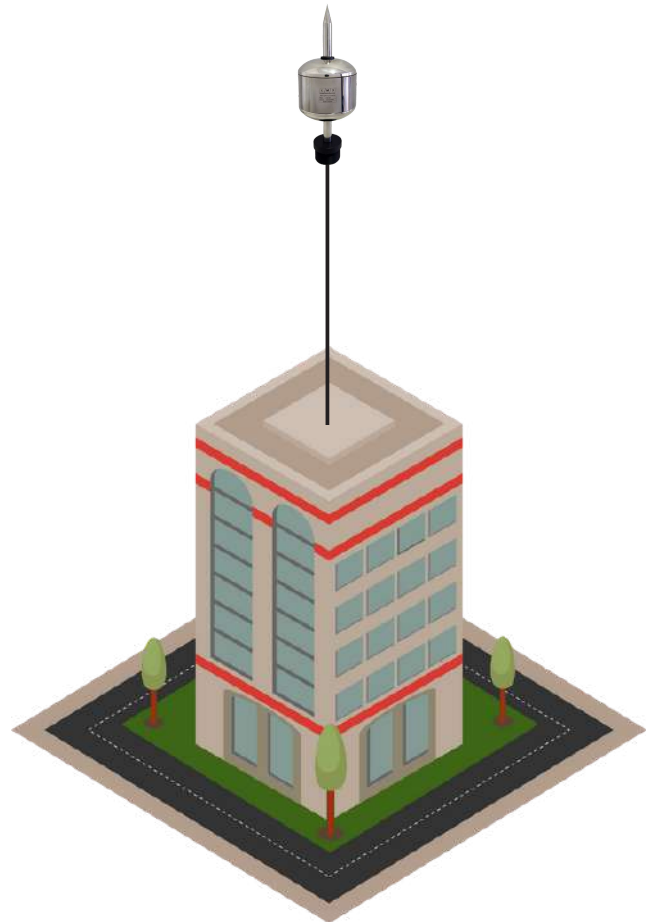
# LIGHTNING MANAGEMENT SYSTEM

LMS has been producing direct strike lightning to a wide range industries. LMS producing ESE air terminal and Conventional Faraday Cage Products.

LMS ESE air terminal comply with NFC 17102 (French Standard) and CE (European Standard).

All LMS ESE air terminal can be used in all industry groups such as :

- Telecommunications and Broadcasting
- Highrise Buildings and hotels - all types of structures
- Mining
- Aviation - Civil & Military
- Power Generations & Distribution
- Rail / Transportation
- Stadium
- Petrochemical, Oil & Gas



**POLE ABOVE BUILDING**



**MONOPOLE**

# NFC 17 102 (FRENCH STANDARD) CERTIFIED



TESTED IN NFC 17-102 LABORATORY

✓ LMS TRON AIR TERMINAL:  $\Delta T = 69 \mu s$

h = height of LMS Tron terminal above the area to be protected (m)	PROTECTION RADIUS, Rp (m)											
	2	4	5	6	10	15	20	30	45	60	80	100
Protection Level I (Very High)	31	63	79	79	80	80	80	80	80	80	80	80
Protection Level II (High)	35	69	86	87	88	89	89	89	89	89	89	89
Protection Level III (Medium)	39	78	97	97	99	101	102	103	105	105	105	105
Protection Level IV (Standard)	42	85	107	107	109	111	113	116	119	120	120	120



**LMS TRON ESE 60**

The protection radius [Rp] of a LMS Tron Air terminal is calculated using the following formula as define by the France National Standard NFC 17-102 [September 2011],

$$Rp [h] = \sqrt{2rh - h^2 + \Delta[2r + \Delta]} \quad \text{for } h \geq 5 \text{ m}$$

$$\text{And } Rp = h \times Rp_5 / 5 \quad \text{for } 2 \leq h < 5$$

where h = LMS Tron height relative to the area being protected(m)

Rp<sub>5</sub> = value of Rp from eqn. [1] when h = 5

- r = 20 m for protection level I [Very High Protection]
- 30 m for protection level II [High Protection]
- 45 m for protection level III [Medium Protection]
- 60 m for protection level IV [Standard Protection]

$$\text{And } \Delta = \Delta T \times 10^6 \text{ (m)}$$

LMS Tron ESE 60 :  $\Delta = 69 \text{ m}$  (Test Laboratory)

Field experience has proved that  $\Delta$  is equal to the efficiency obtained during the ESE evaluation tests.





# LIGHTNING MANAGEMENT SYSTEM

## DOWNCONDUCTORS

Every lightning protection need down conductor to distribute lightning into earthing system.



**Coaxial Cable LMS**  
**2 x 35 mm**



**NYC Cable**



**Bare Copper**



**Copper Tape LMS**

## LIGHTNING COUNTER



**Lightning Counter LMS** designed for easy mounting on a downconductor to effectively count the number of lightning strikes capture by air terminal. Lightning Counter is water resistant (IP 67) and can be tested using remote tester.



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## EARTH RODS



LMS Copper Rod or Copper clad rod UL standard & solid copper for grounding system. LMS copper rod or copper clad rod provides a low-impedance earth to effectively dissipate lightning and electrical fault currents.

## FRP MAST



LMS FRP (Fibreglass Reinforced Plastic) mast is an insulated and water resistant mounting pole which is design to be an insulator between pipe and air terminal.

## EXOTHERMIC WELDING & ACCESORIES



Is a process for permanently joining earthing (grounding) or lightning protection conductors together.

Authorized Distributor



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