EARTHWAY® TECHNOLOGIES

# ADVANCE EARLY STREAMER EMISSION (ESE)

ETLPS ESE 95

ETLPS ESE 65

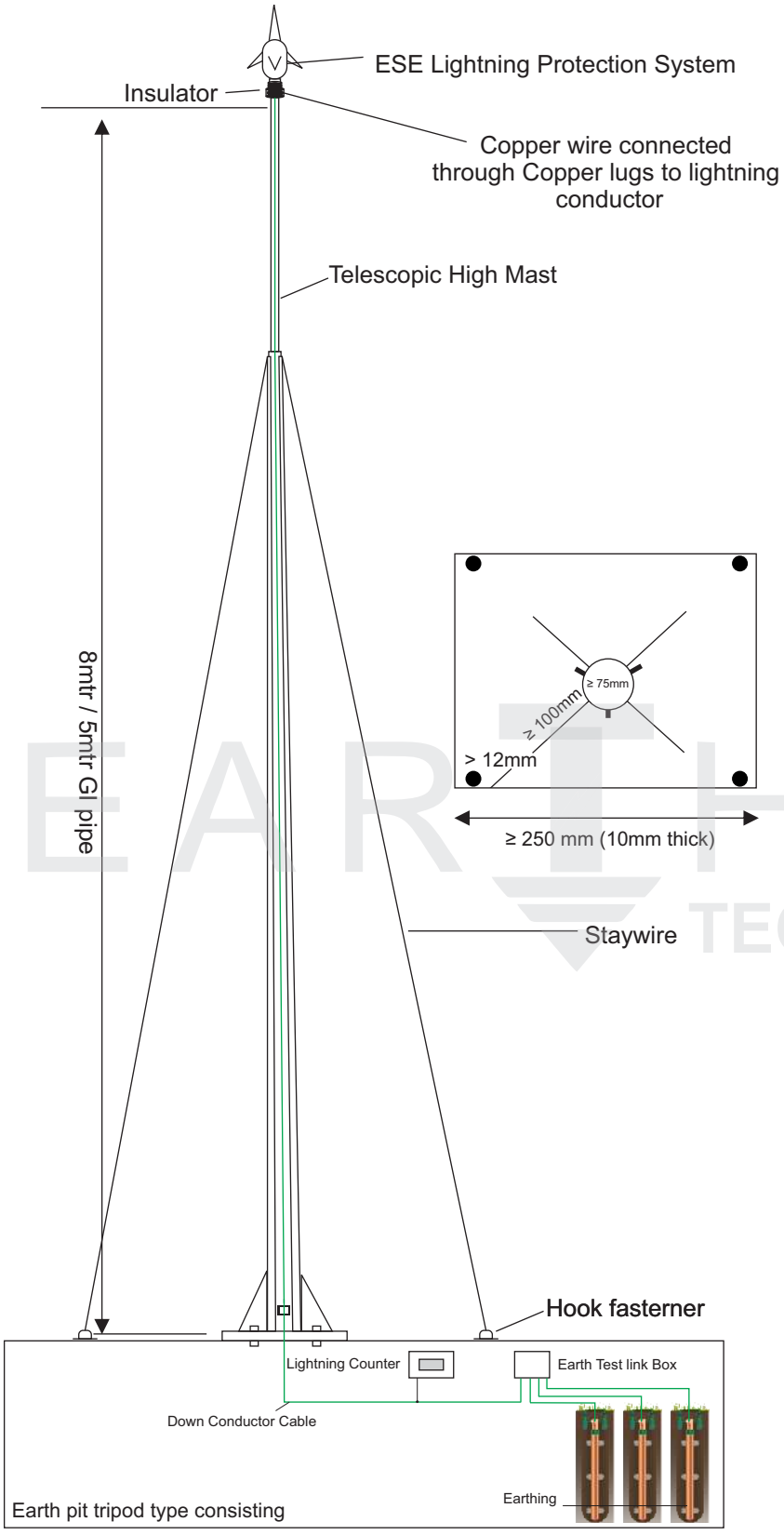
ETLPS ESE 45

## Air Terminal

NFC 17-102 (2011)
IEC 62305:2020

During a storm condition the electrical field intensity in the atmosphere increases rapidly and this sudden change is detected by these sensors fitted to the lower part of the terminal. These sensors continuously monitor the electrical field as well as store energy from ambient electrical field for the functioning of internal electronics. The information received through the sensors by the electronic triggering circuit inside the hosing of the air terminal triggers an ion magnetic field at the upper series of electrode automatically. This activation of energy is made at the precise time when a downward leader is approaching the ground. This leads to the formation of an upward leader and ensures that the lightning energy is channelled sadly down to the low impedance grounding (Earthing) through the purpose designed air terminal through its down conductor network only.

# INSTALLATION




**Disclaimer**

- EARTHWAY TECHNOLOGIES maintains a policy of on - going product development, Specification are subject to change without notice.
- Application details, illustrations and schematic drawings are representative only and should be used as guides.
- It should be noted that 100% protection for direct strike lightning, lightning detection and surge and transient protection equipment is not possible and cannot be provided due to the lightning discharge process being a natural atmospheric event.

During lightning activity electrical charges inside the thunderstone cloud and the concentration of negative charge at the bottom of the cloud creates a giant electric field between the cloud and the ground (Earthing). The electric field value crated depending on the thunderstorm clouds charge concentration values ranging from 5kV/m to 30kV/m. Due to this giant electric field an opposite charge to this cloud concentration will be developed on the earth surface by energy effect. This energy generates thunderstonecloud Hot cooling any prominent object will get attracted towards the downward leader from the cloud concentration. In such condition air become conductive resulting electrical discharges from such cloud. The electric field is constant on a flat surface but will be more intense near sharp ports, edges and elevated structures such as trees, building, Hospital, Solar Plant, Substation, tele towers etc. for example on the top of a sharp rod the E field reaches 300 time more than on a flat surface.

The concept of an ESE is to trigger an upward streamer earlier than a conventional rod, by controlling the emission of the streamer, protection area of Earthway Technologies ESE Lightning Protection System is much wider than a conventional rod, the electronics circuit is the of EarthwayTechnologies is able to detect when the lightning is approaching the ground and at this precise moment it triggers a spark at the tip of the terminal thus involving the emission of an upward streamer which will intercept the lightning. An upward streamer can develop only if its intensity is sufficient. When a lightning is going to occur the intensity of the field become about 100 time higher than usual and reaches values Ground (Earthing) 10kV/m this source of energy is reliable and independent from the rain, the sun or the wind. Earthway Technologies ESE Lightning Conductor Air terminal uses the ambient electric field as the soured energy.

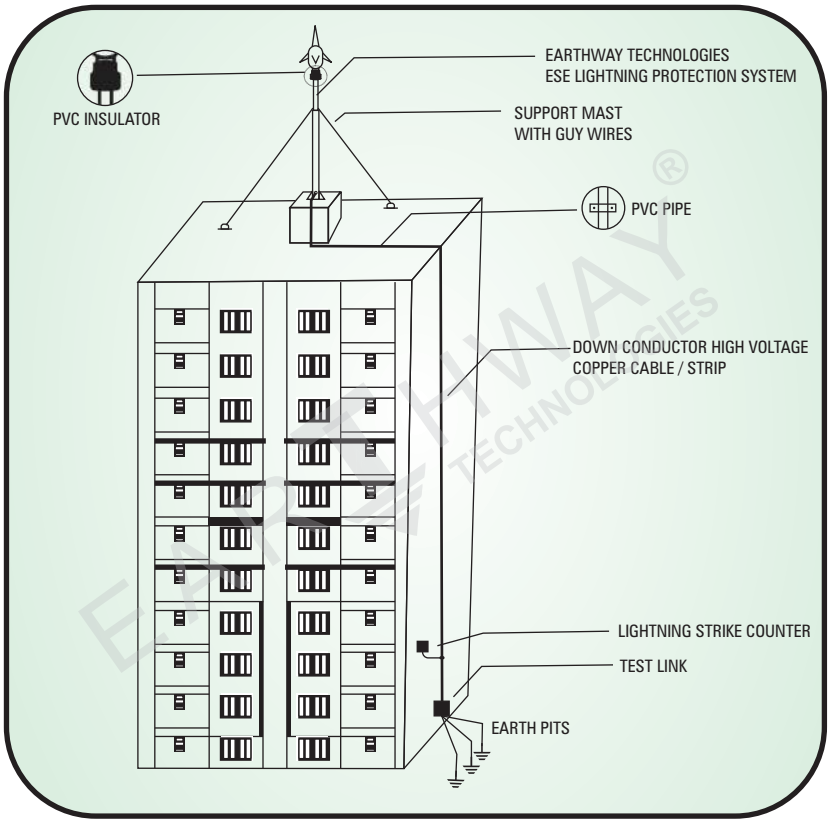
# ESE LIGHTNING PROTECTION SYSTEM

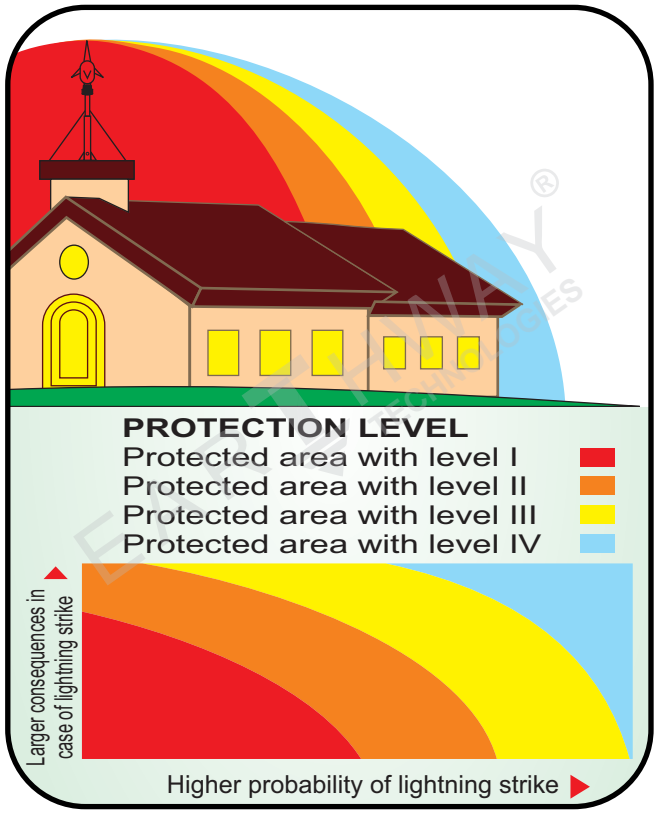
| Level of Protection | I (r=20 m) | | | II (r=30 m) | | | III (r=45 m) | | | IV (r=60 m) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Type | ETLPS ESE 45 | ETLPS ESE 65 | ETLPS ESE 95 | ETLPS ESE 45 | ETLPS ESE 65 | ETLPS ESE 95 | ETLPS ESE 45 | ETLPS ESE 65 | ETLPS ESE 95 | ETLPS ESE 45 | ETLPS ESE 65 | ETLPS ESE 95 |
| h (m) | Radius of Protection Rp (m) | | | | | | | | | | | |
| 2 | 19 | 25 | 31 | 22 | 28 | 35 | 25 | 32 | 39 | 28 | 36 | 48 |
| 3 | 29 | 38 | 47 | 33 | 42 | 52 | 38 | 48 | 58 | 43 | 57 | 64 |
| 4 | 38 | 51 | 63 | 44 | 57 | 69 | 51 | 65 | 78 | 57 | 72 | 85 |
| **5** | **48** | **63** | **79** | **55** | **74** | **86** | **63** | **81** | **97** | **71** | **89** | **107** |
| 6 | 48 | 63 | 79 | 55 | 74 | 87 | 64 | 81 | 97 | 72 | 90 | 107 |
| 8 | 49 | 64 | 79 | 56 | 72 | 87 | 65 | 82 | 98 | 73 | 91 | 108 |
| 10 | 49 | 65 | 79 | 57 | 72 | 88 | 66 | 83 | 99 | 75 | 92 | 109 |
| 15 | 50 | 65 | 80 | 58 | 73 | 89 | 69 | 85 | 101 | 78 | 95 | 111 |
| 20 | 50 | 65 | 80 | 59 | 74 | 89 | 71 | 86 | 102 | 81 | 97 | 113 |
| 45 | 43 | 65 | 76 | 58 | 75 | 89 | 75 | 90 | 105 | 89 | 104 | 119 |
| 50 | 40 | 65 | 74 | 57 | 75 | 88 | 75 | 90 | 105 | 89 | 104 | 120 |
| 55 | 36 | 65 | 72 | 55 | 75 | 86 | 74 | 90 | 105 | 90 | 105 | 120 |
| 60 | 30 | 65 | 69 | 52 | 75 | 85 | 73 | 90 | 104 | 90 | 105 | 120 |

Note - The optimized radius of projection is reached when placing the ESE lightning conductor at 5m & 8m above the highest point the structure to protection. A minimum of 2m is a must

ISO 9001 / ISO 14001 / ISO18001 / IS 2309 / IS 3043 / IEEE 80-2000
NFC 17-102:2011 / IEC 62305 / NABL / CPRI / CE / ROHS

# INSTALLATION AS PER NFC 17-102:2011, IS2309 STANDARD



# Digital Lightning Counter Lightning Strike Counter / Recorder

## Model – ETDLC 1


| Model - | ETDLC 1 |
|---|---|
| Nominal Voltage (Un) | 90 to 270V AC/DC @ 50/60 Hz |
| Indicator | 0-999999 |
| Counting Current Sensor (rise time ≥8µs) | 0-999999 |
| Counting max current | 150KA (1kHz.) |
| Installation | Indoor Installation |
| Enclosure Material | 94-V0 |
| Degree of protection | IP20 |
| Dimension (MM) | 180x129x127(LxWxH) |
| Display | LED |
| Sensor Supply | 12VDC @ 30mA (±10%) |

### Special Feature

- The counter is built quality.
- It will register 0-999999 of Lightning Strikes, the data won't be lost in case of power failure.
- It will check the real lightning strike every time
- Number counting repetition up to 1 million times installation convenient
- Operating temperature : 0-50°C
- Data Storage : -20 - 75°C
- Memory Retention 10 Year

## Installation & User Guidance

1. To connect the lightning counter as the above connect the sensor to the counter connecter holder, Connect system power L/N to lightning counter plug in pin in power shocks. (90 to 270V AC/DC@ 50/60Hz)
2. The display backlight any time on.
3. When the system is normally allowed, to open the lightning counter LED light Display.

## Notices-

#The nominal voltage must be suitable for the supply voltage available.
(90 to 270V AC/DC @ 50/60Hz)
#Indoor Use.
#Please reset when the counter register 999999 Lightning strike otherwise it will not count. Automatically it show zero

### STANDARD & CERTIFICATION

ISO 9001 CERTIFIED · ISO 14001 CERTIFIED · ISO 45001 CERTIFIED · NABL · CPRI · UL · ISI · IEC · TÜVRheinland CERTIFIED · CE · RoHS COMPLIANT · © · MADE IN INDIA

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