

**BRAND INDIA ENGINEERING  
E-CATALOGUE**

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# **Arete Powertech Private Limited**

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Arete Powertech is pioneer company in Electrical Safety and energy efficient solutions. The company introduced it's first Earthing Safety Solutions in 2008. It's vast technical experience helped to identify best in class Earthing and Solar solutions to customize the needs of each user. "Electrical Safety of Man, Material and Machinery is the purpose we exist " (1) An ISO 9001:2015, and ISO 14001: 2015 certified company (2) Our 20 + years' experience for customized cost effective solutions (3) Undoubtedly India's best Electrical safety Solutions (4) Committed to continuous improvement and customer satisfaction (5) Products comply with CPRI, CE and RoHS standards (6) Startup India , MSME and NSIC approved We have mastered the art of Total Site and Facility Protection by designing site specific Grounding, Lightning Protection and Solar Systems. We provide solutions that secure operations, protect infrastructures and offer peace of mind. Guiding Force- An electrically safe world !!!

**Products Description**

**Maintenance free Chemical Earthing Electrode**

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### Technical Details

Copper Bonded Electrode carries equivalent properties of Copper Electrode yet ecumenical. Superior resistance to oxidization, the copper bonded electrodes are considered to be the most preferred equipment for Earthing. Copper coating 100 micron to 250 micron. Mostly used in Transformers, Transmission and distribution, telecommunication, ATMs and similar applications. Sizes available 1. Length : 1 meter to 3 meters 2. OD : 14 mm to 50 mm Estimated trouble free life : 20 years

### ITC HS Codes

853590

### Certification/ Standard

CPRI

### Issuing Agency

Central Power Research Institute

### Date of Issue

18-04-2018

### Date of Expiry

30-04-2030

### End Use Sectors

### Product Images



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### ESE Lightning Protection

#### Technical Details

Extending into the spectrum of lightning arresters, we bring forth an impeccable quality of E.S.E. Early Streamer Emission for protecting structures such as high rise buildings from damage by intercepting flashes of lightning. These arresters transmit the lightning current to the ground, which in turn ensure the total protection of the building. Manufactured by implementing latest technology, these arresters have the capability of withstanding toughest weather conditions. Working Principle: The basic purpose of the ESE Lightning Arrester is to produce ionization directed at the cloud so that the electrical charge in the lightning strike can be channelized from the very beginning. It consists of emitting an ascending electrical unloading to influence the effect of the descendant tracer. Advantages: • Implemented with latest technology • Non electronic type • 100% effective discharge capacity • Carries lightening current without resistance • In compliance with the industrial standards • Technical qualities remain unaffected after each strike • No external power required • Low maintenance cost • Easy to install • Resistant to both corrosion as well as high temperature • Can withstand adverse weather conditions Application: The application of the E.S.E. Lightning Arrester is to provide the highest levels of lightning protection to the buildings from lightning. The ESE Lightning arrester is designed and installed as per the application requirement parameters, which includes dimensions of the structure, required level of protection and terminal type. The components that are used in ESE Lighting Arrester includes: Air Terminals, Down Conductor, Lightning Strike Counter, Earthing.

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ITC HS Codes

853590, 85354010

Certification/ Standard

CPRI

Issuing Agency

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Date of Issue

Date of Expiry


End Use Sectors

Product Images





## BRAND INDIA ENGINEERING



**GRAVITY**  
COPPER STRIKE PROTECTIVE SYSTEM (CSPS)

**Product Datasheet**

The principle of operation of an Gravity terminal is to create an upward streamer earlier than conventional air terminals or other objects on the earth. Gravity GLPS does this by collecting and storing ground charge during the initial phase of a thunderstorm development and emits along and consistent upward streamers to intercept leaders. These streamers from the foil tip earlier than other competing structural points. The Gravity GLPS terminal becomes a preferred point for the capture of the lightning discharge within the protected area.

**Features**

- 1) Meets NFPA 780 & UL 2186 Standards.
- 2) Tested to with stand multiple 40kA impulses.
- 3) High Quality Anti-Corrosive and Conductive Coating.
- 4) Wind Resistance.
- 5) 5 Years Replacement Warranty.

**Triggering Time Gain**

The Triggering Time, T (gain) defined as the gain at the spark over instant obtained with an ESE terminal compared with a simple rod terminal exposed to the same conditions.

**Different Modes of Gravity GLPS Field Sensitive Device**

- 1) Gravity20
- 2) Gravity40
- 3) Gravity60

Radius of Protection (Rp) in Metres		
Protection Level	H(m) GLP20 GLP40 GLP60	
Level - I (D = 20)	2	13 25 37
	4	25 51 63
	5	32 63 79
	8	33 64 79
	10	34 64 79
Level - II (D = 36)	2	15 28 35
	4	26 57 69
	5	35 71 87
	8	39 72 87
	10	40 73 88
Level - III (D = 45)	2	16 32 39
	4	36 64 79
	5	40 81 97
	8	47 82 98
	10	48 83 99
Level - IV (D = 60)	2	20 36 43
	4	41 72 85
	5	52 95 107
	8	56 97 109
	10	56 97 109

**Triggering Time Distance Gain**

According to NF C 17-100, the triggering time instantaneous gain  $\Delta T$  is associated with a triggering time distance gain  $\Delta L$ .

$\Delta L = V \cdot T$  where:

- $\Delta L$  (m): gain in lead distance of the spark over distance.
- $V$  (m/s): the average speed of the downward leader.
- $\Delta T$  (s): gain time spark over time of the upward leader.


**Lightning Protection of Structures**

As a general rule for protection, the object to be protected shall be in the Radius of Protection of a Lightning Protection System whose electromagnetic characteristics are compatible with the quantity of the object to be protected (physical damage, failure of electrical and electronic systems due to over-voltage).

**Protection to reduce physical damage and life hazard: The functions of the external LPS are**

- To intercept a lightning flash to the structure (with an air-termination system).
- To conduct the lightning current safely to earth (with a down-conductor system).
- To disperse it into the earth (with an earth-termination system) and equalize potential between other earth-termination systems on site (with an isolation spark gap).

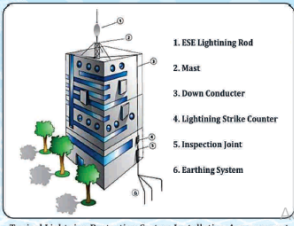
Four classes of LPS (I, II, III, IV) are defined as a set of construction rules.



**GLPS 60**  
Weight = 6 Kg  
Dia = 75mm  
Length = 250mm

**GLPS 40**  
Weight = 4.6 Kg  
Dia = 65mm  
Length = 200mm

**GLPS 20**  
Weight = 3.2 Kg  
Dia = 50mm  
Length = 150mm



1. ESE Lightning Rod  
2. Mast  
3. Down Conductor  
4. Lightning Strike Counter  
5. Inspection Joint  
6. Earthing System

Typical Lightning Protection System Installation Arrangement

Sectors of Interest

Electrical

Is OEM Supplier?

Yes

Is After Sales Service Provider?

Yes

Importance of niche products

**Characteristics** • It possess uniform coating thickness 250 micron that ensures stable performance. • These are corrosion resistant and have extended service life in any soil type • Exceed the requirement of ANSI/ UL 467-1984, CSA and ANSI/NEMA GR-1 • Average tensile strength : 80,000 psi • Straightness tolerance : 0.010" per linear foot • Excellent electrical and thermal conductivity Best suited for electrical grounding for following industries: • Mobile Telecommunications • Electrical sub stations and machinery • Electrical Equipments • Manufacturing Industries • Petrol & Chemical Industry

Potential market of niche products

Europe, America, Africa

Product Supply Record

NA

Patented Technologies

NA

Awards/Accolades

NA