

<sup>TM</sup>

TESTED PRODUCTS  
EFFICIENT SERVICE  
TRUSTED BRAND

An ISO 9001: 2015 Company

## Product Catalog



## Earthing & Lightning Protection System





## AXIS ELECTRICAL COMPONENTS (I) P. LTD.

### Our Vision

To be a leading global enterprise providing innovative & value based solutions in the Electrical & Energy Sector.

### Our Mission

AXIS is committed to deliver excellence and superior value to our customers, shareholders, employees and society at large.

Our mission is driven through the 4 pillars of:

**1. Customer Centricity:** To become the "Supplier of Choice", delivering products and services and creating value for our customers.

**2. People Centricity:** To be the "Employer of Choice", nurturing and developing talent, fostering teamwork & capability with a high sense of pace, passion and pride driven by value & culture.

**3. Community Centricity:** To be recognized as a responsible corporate citizen through facilities, being legally compliant and driven by a strong corporate governance.

**4. Business & Technology Centricity:** To drive innovative, efficient & effective systems, processes and delivery backbone backed by technology for a sustainable and scalable business growth and value.



### Company Profile

#### Leading Manufacturer & Exporter

Axis is the leading Indian Manufacturer & Exporter of a wide range of Electrical Components used in Electrical Installations and in the Equipment Building industry. Our main customer base consist of Distributors/Wholesalers of Electrical Products, Electrical Contractors & Installers, Equipment Manufacturers, Maintenance Companies and Government Authorities.

#### Exports to more than 80 Countries Worldwide

Over the years, Axis has supplied high quality and tested products to thousands of customers in over 80 countries. As a result, the Axis brand has become synonymous with Quality.

#### International Certifications

Axis invests heavily in continuous improvements in its products and manufacturing processes. This allows Axis to always be ahead of the curve through certifications and approvals from around the world. Products manufactured by Axis follow widely accepted international such as BS, DIN, UL, NFC, AS/NZ & Indian Standard (IS). CRISIL India, an S&P subsidiary, rated Axis as having the highest performance capabilities and strong financial strength.

#### Constant Improvement

Axis's dual focus on foreseeing customer requirements and looking at the future of the industry, translates to a continuous desire to evolve and upgrade our product offerings.

#### Quality Management

Our goal is to provide each customer with products, systems and services that meet the highest standards of quality. To assure quality management, Axis has achieved an ISO 9001 Certification.

## Axis – 25 Years of Legacy & Trust in Lightning Protection

For over 25 years, Axis has provided world leading Earthing, Lightning and Surge Protection solutions. From product design and manufacturing to risk assessment and system design as per world leading Lightning Protection guidelines, Axis offers customers 360° Lightning Protection & Earthing Solutions.

Axis was founded in 1994 and since then we have supplied our Lightning Protection & Earthing solutions to projects across the globe with sales in over 80 countries.

Axis products are manufactured in-house with thorough in-process and batch inspections using electrical, chemical, and mechanical testing to ensure the best level of quality for our customers. Our lightning protection and earthing solutions are used daily to protect substations, solar parks, machinery, and other structures from the dangers of electrical surges and to ensure the highest level of protection for structures and human lives.

### Why use Axis?

#### Tested Products

Axis products have been tested as per the latest international standards for Lightning Protection & Earthing to ensure the highest quality for our customers.

#### Technical Expertise

With 25 Years of experience in the field of earthing and lightning protection, Axis provides deep product, design and application knowledge.

#### Design Knowledge

With our knowledge of the latest international standards for system and product design, along with using proprietary and industry leading software, we provide the best results for our clients.

#### Customer Service

Our large customer service and technical teams are always ready to help clients with their questions on earthing & lightning protection.

#### Trust

After 25 years, we have built a strong legacy of trust with our customers ensuring that they always receive the highest quality products with the best service.

## What causes Lightning?

Most lightning never reaches the ground, they just stay within the cloud where they originated. Sometimes a charge may escape the cloud and create a magnificent piece of art for photographers along with a loud boom for nearby observers. These beautiful natural phenomena are dangerous, they kill people all over the world, but they last only for a fraction of a second.

## What do You Need to Make Lightning?

Quite simply, all you need is a mixture of cold and warm air. As the warm, moist air rises, it takes along a retinue of water droplets which interact and rub against the ice crystals in the cold air. This interaction causes ionization and the buildup of static electric charge – positive charges towards the top of the cloud and negative charges towards the bottom of the cloud.

## Shooting Down

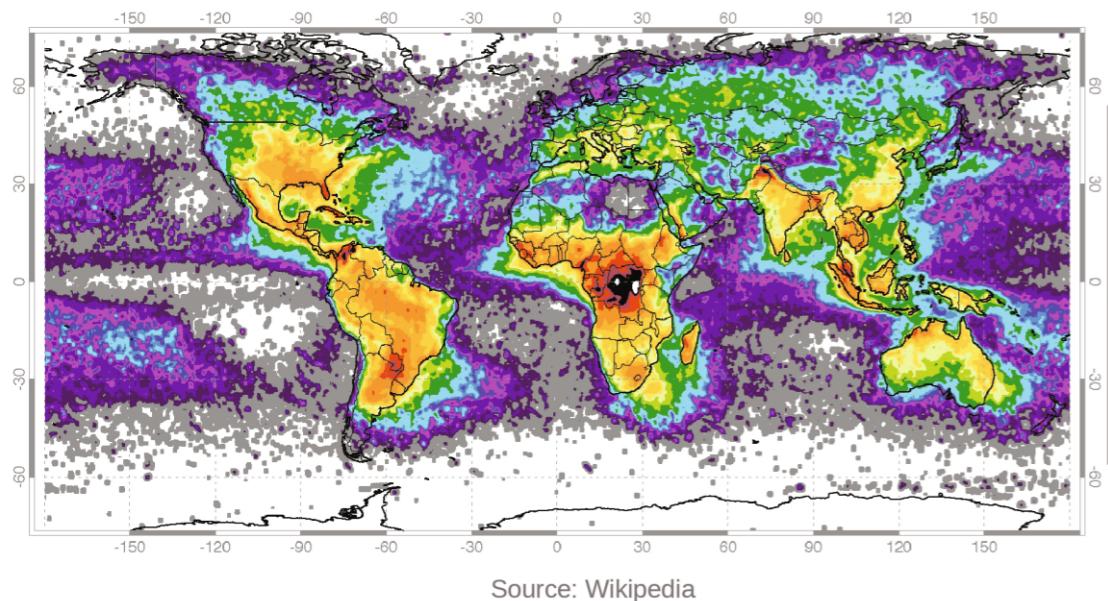
As energy is exchanged due to the build-up of opposing charges across the cloud, at some critical point, the energy starts to escape the cloud and it starts sending a series of branches downwards.

ELPS Catalogue Intro 3 As this negative charge moves downwards from the cloud towards the ground, it repels the electrons in its vicinity, thus leaving a positively charged pathway from the ground or a tree or the lightning arrester on top of a building., they repel electrons—leaving positively charged columns of air stretching up from the earth and the tops of buildings and trees. The merger of one of these positively charged columns with a bolt's branch becomes the path for the lightning to take.

A discharge of lightning can carry over 100 million volts of electricity which can easily cause damage to any kind of structure – they can destroy monuments, explode walls and often be the cause of devastating fires.

## Where is Lightning most common?

The map below was developed by NASA using data from 1995 to 2003 to show global lightning frequency in strikes/km<sup>2</sup>/year. Unsurprisingly, you can see that the tropics tend to have the highest lightning frequency while the frequency tends to drop as we move closer to the poles.

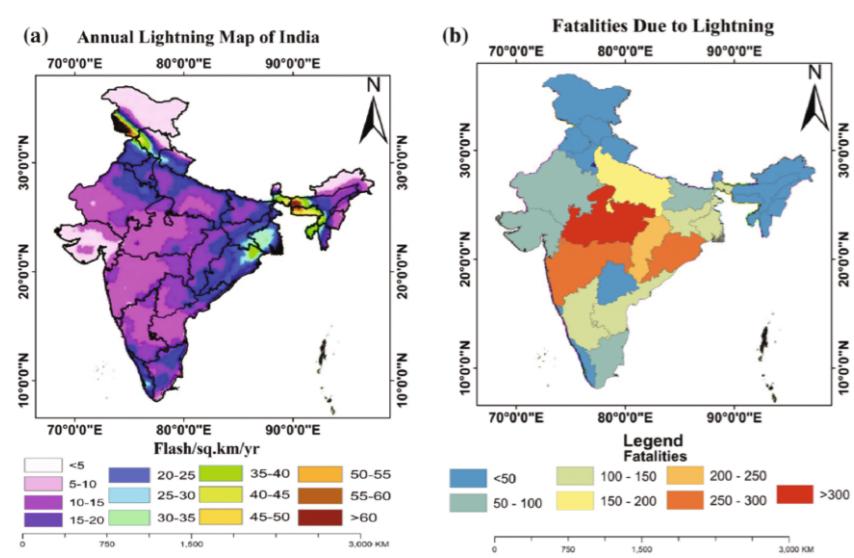


Source: Wikipedia

## What is the situation in India?

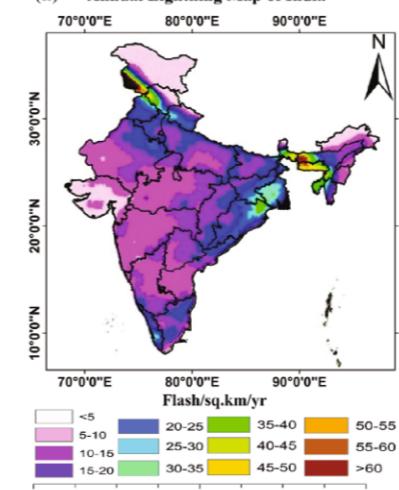
Despite its location in the tropics and high frequency of thunderstorms, Lightning is an understudied phenomenon in India. As per a report published by CROPC as part of their Lightning Resilient Campaign, India was hit by 6.5 million lightning strikes between 1st April, 2019 to 31st July, 2019 with 2.4 million of those lightning strikes hitting the ground.

A study published in 2020 by Yadava et al in the journal 'Natural Hazards' used data over a period of 16 years (1998-2013) to show that the annual rate of death due to lightning averages at approximately 2,000, which was far higher than other causes of death due to nature. The highest number of casualties per annum were found in Madhya Pradesh (313), Maharashtra (281) and Odisha (255). The two maps below show the annual distribution of lightning flashes and deaths across the country.

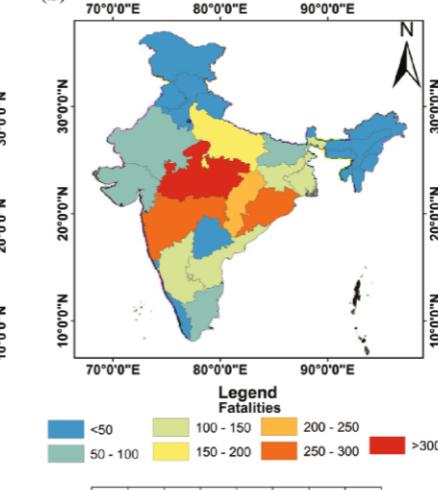


Source: The major lightning regions and associated casualties over India

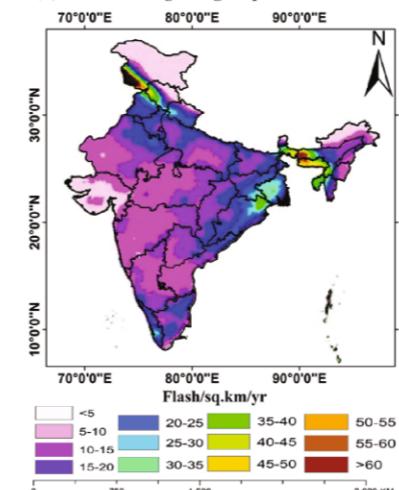
(a) Annual Lightning Map of India



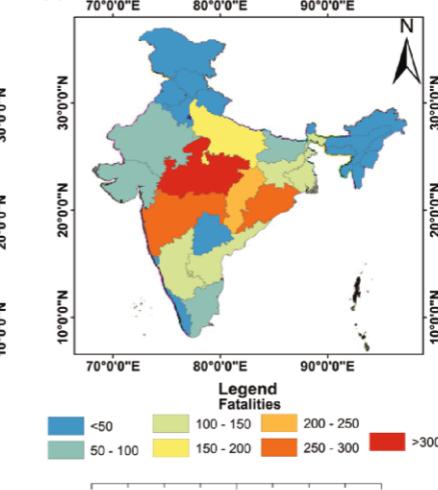
(b) Fatalities Due to Lightning



(a) Annual Lightning Map of India



(b) Fatalities Due to Lightning



The CROPC report notes in its conclusions that "(e)ssence of 100% safety from Lightning is possible only on installation of standard Lightning protection device ... Results have been very evident as Odisha had zero lightning casualty during Cyclone Fani and Jharkhand had lightning accident free Shrawani Mela, consecutively 6 years since 2014."

## How do we protect against lightning?

Lightning protection does not stop at the external lightning protection that we see on the top of structures. All the global and national standards that govern lightning protection across the world stress the importance for a more integrated solutions that involve Earthing, Lightning Protection and Surge Protection. IS/IEC 62305 and other standards such as NFPA 780 for the US, emphasise this integrated view of lightning protection system design. At Axis, our goal is to build the highest quality of PROTECTION across India. With our 25 years of experience and expertise in the field, our team of engineers knows exactly what is needed to achieve the most dependable and longest lasting lightning protection and earthing system for our clients. Axis provides customised products and services across sectors to ensure the highest levels of PROTECTION.

## Lightning Protection Standards

### IS/IEC 62305 & IEC 62561 Standards for Lightning Protection System Design and Product Testing

The International Electrotechnical Commission (IEC) prepares and publishes International Standards, such as IEC 62305, for all electrical, electronic and related technologies and is the leading international organization in its field. The IEC technical committee is comprised of representatives from the standard bodies of various countries with each country getting one vote. The process of creating and issuing the IEC standards are thus an international effort with votes given to every member. The adoption of the relevant IEC standards are usually voluntary for countries and the ELPS Catalogue Intro 7 content of the standards are usually introduced as improvements to that country's existing standards.

In this article, we will be referring separately to design and component standards for Lightning Protection and Earthing. The Light Protection Design engineer or installer will use the design standard to design the complete lightning protection system including placement of the components. The lightning protection component manufacturer will use the component standards to ensure product compliance and quality.

### IS/IEC 62305 & IEC 62561 Standards for Lightning Protection System Design and Product Testing

IEC 62305 - Protection Against Lightning, is the apex level document that informs the standards for lightning protection around the world. It is a design standard that comprises of four documents that provide the lightning protection designers with the rules and regulations they require to design an LPS. The IEC 62305 standard covers the regulations required for the protection of equipment and structures from the effects of both direct and indirect lightning strikes. The diagram below which is taken directly from the IEC 62305 document, clearly shows the relationship between the 4 parts of the standard. Part 1 is a general introduction to the threat of lightning, part 2 delves into the calculation of lightning risk, part 3 describes the design of the Lightning Protection System (LPS) and Part 4 describes the design of the Surge Protection Measures(SPM)

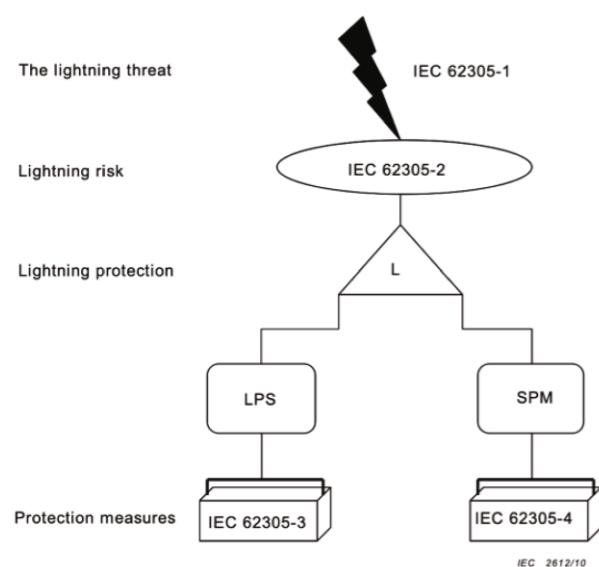


Figure 1 – Connection between the various parts of IEC 62305

IEC 62305, does not consider the following cases under the scope of the standard:

- Railway Systems
- Vehicles, ships, aircraft, offshore installations
- Underground high pressure pipelines
- Pipe, power and telecommunication lines placed outside the structure.

Classification	Title
IEC 62305 - 1 : 2010 - 12	Protection against Part 1: General principles
IEC 62305 - 2 : 2010 - 12	Protection against Lightning Part 2: Risk management
IEC 62305 - 3 : 2010 - 12	Protection against lightning Part 3: Physical damage to Structures and life hazard
IEC 62305 - 4 : 2010 - 12	Protection against lightning Part 4: Electrical and electronic systems with in structures

Classification	Title
IEC 62305 - 1 (EN 62305- 1): 2010 - 12	Protection against lightning Part 1: General principles
IEC 62305 - 2 (EN 62305- 2): 2010 - 12	Protection against Lightning Part 2: Risk management
IEC 62305 - 3 (EN 62305- 3): 2010 - 12	Protection against lightning Part 3: Physical damage to Structures and life hazard
IEC 62305 - 4 (EN 62305- 4): 2010 - 12	Protection against lightning Part 4: Electrical and electronic systems with in structures

Table 1.1.1 Lightning protection standards valid since December 2010

### IEC 62305-1: General Principles

Part 1 of the standard is a general introduction to the entire standard in addition to the properties of lightning and the factors used to simulate the effects of lightning strikes. The basics of procedures and principles of protection which are used in the rest of the standard are also explained in IEC 62305 Part 1.

### IEC 62305-2: Risk management

Part 2 of the standard is the key to the correct implementation of Part 3 and Part 4 of the standard. IEC 62305-2 is concerned with the Risk Assessment of a structure due to lightning flashes and to determine whether it requires a lightning protection system. This part of the standard provides the complete framework for Risk Assessment based on four types of losses namely 'Loss of human life or permanent injuries', 'Loss of service to the public', 'Loss of cultural heritage' and 'Economic loss'. Protection measures can be determined based on this Risk Assessment and a residual risk is established. This residual risk is reduced using protection measures until it is below the tolerable risk. We can use this method to determine the class of LPS based which are in compliance with IEC 62305-3 and 62305-4. As summarised in IEC 62305-2, "Once an upper tolerable limit for the risk has been selected, this procedure allows the selection of appropriate protection measures to be adopted to reduce the risk to or below the tolerable limit."

Axis has used the guidelines of IEC 62305 Part 2 to design a Risk Assessment Software that allows you to easily calculate and assess the risks to determine the Class of LPS for your structure. This software uses parameters unique to your structure to help you determine the best and most efficient protection system. The risk assessment software is part of a bundle that always allows customers to also easily calculate earth rod length requirements, separation distance for lightning arrestors, Surge Protection Device (SPD) selection and more! Please contact us for more information on our software suite

## IEC 62305-3: Physical damage to structures and life hazard

Part 3 deals with the protection of people and structures from physical damage and injury due to touch and step voltages caused due to direct lightning strikes. The standard states that the "main and most effective measure of protection of structures from physical damage is considered to be the lightning protection system (LPS)" which consists of external lightning protection (air termination system, down conductor system and earth termination system) and internal lightning protection (equipotential bonding and separation distance). IEC 62305-3 provides the guidelines to help "LPS designers and installers, architects and builders" to correctly design, install and maintain the external and internal lightning protection systems to protect people from touch and step voltages.

## IEC 62305-4 (EN 62305-4): Electrical and electronic systems within structures

Part 4 was introduced due to the ever-increasing cost of failures of electrical and electronic systems in our digital world. IEC 62305-4 provides the details for the design, installation, inspection, maintenance and testing of Surge Protection Measures (SPM) to protect electrical and electronic systems from the effects of Lightning Electromagnetic Impulses (LEMP).

Part 4 also introduces the idea of Lightning Protection Zones (LPZ). The central idea is to limit current and voltage surges, induced by lightning or otherwise, from damaging a structure or its contents (people or equipment) by dividing the structure into a risk zones. These zones are nested within each other, with the most sensitive zones being the innermost. A risk assessment according to IEC 62305-2 is performed for each zone to select the most appropriate protection at the optimum cost for that zone. By using standard appropriate lightning protection systems, such as lightning arrestors and ELPS Catalogue Intro 13 SPD's, the effects of lightning hitting the outer zone, directly or indirectly, are meant to be reduced before they can affect people or sensitive equipment in the inner zones.

Axis can help you with the entire process from Step 1 of Risk Assessment, to Lightning Protection System Design and all the way through supply of internationally approved products. Our engineers will be on the field with you to make sure that they provide the most precise protection for your structure!

## IS 3043:2018 - Code of Practice for Earthing

IS 3043:2018 is an Indian Standard code for electrical installations that provides guidelines for earthing design in order to protect against shock and prevent the formation of dangerous touch voltage levels.

The code covers various aspects of earthing, including

- Connections to earth,
- Earth-fault protection in consumer's premises,
- Power stations, substations and overhead lines,
- Industrial premises,
- Standby and other private generating plant,
- Medical establishments,
- Miscellaneous installations and considerations,
- Measurements and calculations, and
- Data processing installations

The code also includes updates and revisions from previous versions, such as the inclusion of guidelines for earthing in medical establishments and the incorporation of amendments from the earlier IS 3043:1987. The code aims to provide a comprehensive set of guidelines for ensuring the safety and effectiveness of electrical installations through proper earthing design.

## UL 467

UL 467 is a standard for grounding and bonding equipment that covers performance criteria, testing, and certification requirements for manufacturers. It helps ensure the ELPS Catalogue Intro 14 safety and reliability of these products in electrical systems. UL 467 establishes performance criteria and testing requirements for Earthing Products - especially Earth Rods. This helps ensure that earth rods are reliable and effective in grounding electrical systems, which can help reduce the risk of electrical accidents and fires. By meeting the requirements of UL 467, Earth Rods can be certified as safe and suitable for use in electrical installations.

## IEC 62561 – Lightning Protection System Components (LPSC)

The IEC 62561 series describes the requirements and tests for the various lightning protection system components (LPSC). It summarises the test requirements for the components of a lightning protection system (LPS) that is designed and implemented as per IEC 62305. The various components of the LPS include:

- Connection components such as lightning conductor clamps, bonding & earthing clamps, bridging components, pipe clamps, equipotential bonding bars
- Conductors and Earth Electrodes (link to the Earth Electrodes blog)
- Isolating Spark Gaps
- Conductor Fasteners
- Earth Pits
- Lightning Strike Counters
- Earth Enhancing Compounds

Product Standards	Contents
IEC 62561 - 1	Lightning protection system components - Requirements for connection components
IEC 62561 - 2	Lightning protection system components - Requirements for Conductors & earth electrodes
IEC 62561 - 3	Lightning protection system components - Requirements for isolating spark gaps
IEC 62561 - 4	Lightning protection system components - Requirements for conductor fasteners
IEC 62561 - 5	Lightning protection system components - Requirements for earth electrode inspection housing & earth electrode seals
IEC 62561 - 6	Lightning protection system components - Requirements for lightning strike counters
IEC 62561 - 7	Lightning protection system components - Requirements for earthing enhancing compounds

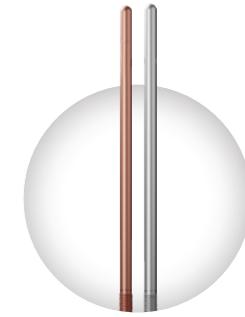
IEC 0675-6-11 (VDE 0675-6-11)	Low-voltage surge protection devices - Part 11: Surge protection devices connected to low-voltage power systems
IEC 60364-5-53 (VDE 0100-534)	Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control - Clause 534: Devices for protection against surge voltages
IEC 60364-4-44 (VDE 0100-443)	Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances - Clause 443: Protection against surge voltages of atmospheric origin or due to switching
IEC 60364-7-712 (VDE 0100-712)	Requirements for operational premises, special rooms and systems - Solar photovoltaic (PV) power supply systems

## Other IEC Standards Used for Lightning Protection

Product Standards	Title
IEC 61643 -11	Surge protection devices connected to low-voltage power systems- requirements & test methods
IEC 61643 -21	Surge protection devices connected to telecommunications & signaling networks
Product Standards	Contents
IEC 0675-6-11	Low-voltage surge protection devices - Part 11: Surge protection devices connected to low-voltage power systems
IEC 60364-5-53	Low-voltage electrical installations - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control - Clause 534: Devices for protection against surge voltages
IEC 60364-4-44	Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances - Clause 443: Protection against surge voltages of atmospheric origin or due to switching
IEC 60364-7-712	Requirements for operational premises, special rooms and systems - Solar photovoltaic (PV) power supply systems

### Air Termination

- Introduction
- Aluminium Air Rod Round Headed
- Copper Air Rods
- Elevation Rod
- Copper bonded Elevation Rod
- Multi Points
- Strike Pad
- Air Terminal Base - Self Supporting
- Air Termination with Tripod
- Air Termination with Mast
- Air Rod to Conductor Connectors



11

### DOWN CONDUCTOR

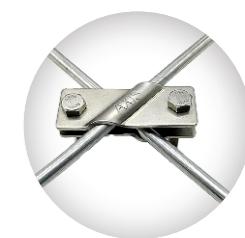
- Aluminum Round conductors
- Copper Clad steel Round Conductors
- Expansion Piece
- Copper Flat Tapes
- Insulated Copper Conductors
- Insulated Copper Tape
- Round conductor holders
- Flat conductor holders
- Conductor clamp for seam roof
- Conductor Connectors
- Conductor Holder Clamp for Round Column/Handrail
- Disconnecting Link
- Lightning Counter



12

### STRUCTURAL EARTHING

- Earth Points
- Diagonal Clamps
- U-bolt Rebar to conductor clamps
- U-bolt Rod Clamps - Type 'E' with Double Plate



13

### EARTHING

- Copper Bonded Earth Rods (Threaded)
- Copper Bonded Earth Rods (Threaded) Kit
- Copper Bonded Earth Rods (Unthreaded)
- Copper Bonded Earth Rods (Unthreaded) Kit
- Pure Copper Earth Rods (Threaded)
- Pure Copper Earth Rods (Threaded) Kit
- Pure Copper Earth Rods (Unthreaded)
- Pure Copper Earth Rods (Unthreaded) Kit
- Stainless Steel Earth Rod (Internal Threading)
- Earth Rod clamps
- Axis Chemically Charged Rod Electrodes (ACRE)
- Structure of Chemically Charged Rod Electrode
- Technical Specification:
- Light Weight Plastic Earth Pit
- Concrete Earth Pit
- 'C' Type Connectors - Compression Type
- Earth Bars
- Earth Bars With Single Disconnecting Link
- Earth Bars With Twin Disconnecting Link
- Earth Bus Bar For Telecommunication
- Earth Bars - Galvanised
- Earthing Accessories



14

### EXOTHERMIC JOINTS

### SURGE PROTECTION DEVICES

### ASLA



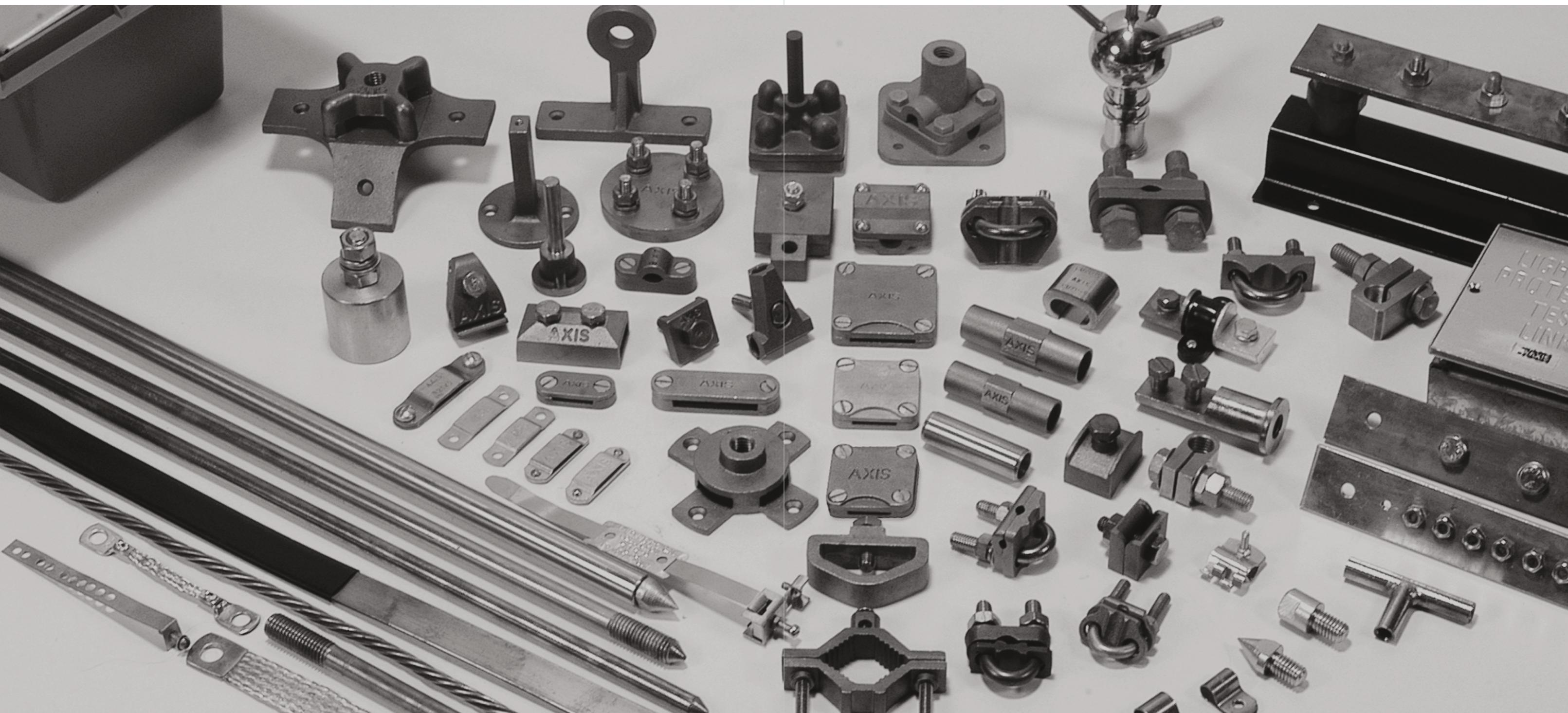
15

37

38

39

40



## Earthing & Lightning Protection System

Over the years, AXIS has been supplying a wide range of quality products for Earthing and Lightning Protection.

AXIS Lightning Protection Systems are designed to protect structures and systems against Lightning damage. AXIS tests its lightning protection products in accordance with Major international standards such as IEC, BS EN, UL & IS. AXIS also provides design solutions including a proprietary risk assessment software complying to IEC 62305-2.

AXIS Earthing & Lightning protection systems are being used in core sectors of the economy such as Power, Industrial, Oil and many more.

## Air Termination

## Aluminium Air Rod Round Headed - Unthreaded

These Rods are made up of high conductivity EC Grade Aluminum.

Rod Length mm	Rod Dia. mm	Material	Code
300	14	Aluminium	ATP0316P
600	14		ATP0616P
1000	14		ATP1016P
2000	14		ATP2016P
500	16		ATP0518P
1000	16		ATP1018P
1500	16		ATP1518P
2000	16		ATP2018P
2500	16		ATP2518P



## Aluminium Air Rod With Round Tip - Crimped Type

Rod Length mm	Rod Dia. mm	Material	Code
1000+2000	10+16	Aluminium	ATP301810
1000+1000+1500	10+16+22		ATP352410
1000+1000+2000	10+16+22		ATP402410

## Copper Air Rods

These Rods are made up of high conductivity EC Grade Copper &amp; Aluminum.

Rods can be installed with or without Multiple Points

Application: Used as Air termination on Structures and buildings for protection from lightning strikes.

Finish : Natural &amp; Clean

Rod Length mm	Rod Dia. mm	Thread Dia. Inch	Material	E-Code
300	14.2	5/8"	Copper	CRP1603
500	14.2	5/8"	Copper	CRP1605
600	14.2	5/8"	Copper	CRP1606
900	14.2	5/8"	Copper	CRP1609
1000	14.2	5/8"	Copper	CRP1610
1200	14.2	5/8"	Copper	CRP1612
1300	14.2	5/8"	Copper	CRP1613
1500	14.2	5/8"	Copper	CRP1615
2000	14.2	5/8"	Copper	CRP1620
2200	14.2	5/8"	Copper	CRP1622
3000	14.2	5/8"	Copper	CRP1630
500	17.2	3/4"	Copper	CRP2005
1000	17.2	3/4"	Copper	CRP2010
2000	17.2	3/4"	Copper	CRP2020
300	14.2	5/8"	Aluminium	ARP1603
500	14.2	5/8"	Aluminium	ARP1605
1000	14.2	5/8"	Aluminium	ARP1610
1500	14.2	5/8"	Aluminium	ARP1615
2000	14.2	5/8"	Aluminium	ARP1620
500	17.2	3/4"	Aluminium	ARP2005
1000	17.2	3/4"	Aluminium	ARP2010
2000	17.2	3/4"	Aluminium	ARP2020

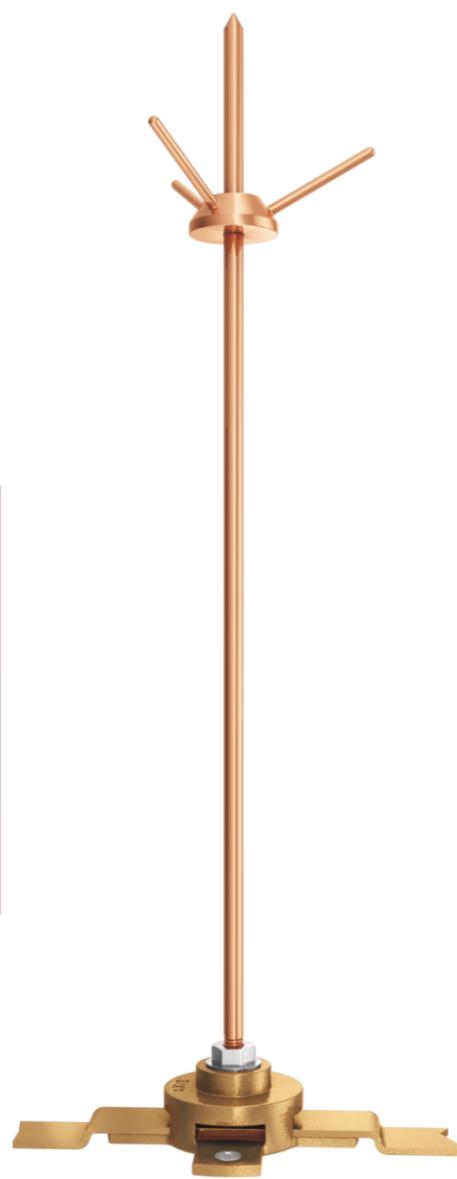


## Air Termination

### Elevation Rod

Manufactured from High conductivity Copper to BS 2874 & Aluminium to BS 2987

Rod Length mm	Rod Dia. mm	Thread Dia. Inch	Material	E-Code
500	14.2	5/8"	Copper	CER1605
600	14.2	5/8"	Copper	CER1606
800	14.2	5/8"	Copper	CER1608
1000	14.2	5/8"	Copper	CER1610
1300	14.2	5/8"	Copper	CER1613
1500	14.2	5/8"	Copper	CER1615
1800	14.2	5/8"	Copper	CER1618
2000	14.2	5/8"	Copper	CER1620
2400	14.2	5/8"	Copper	CER1624
2500	14.2	5/8"	Copper	CER1625
3000	14.2	5/8"	Copper	CER1630
500	16	5/8"	Copper	CER1805
300	16	5/8"	Copper	CER1803
600	16	5/8"	Copper	CER1806
800	16	5/8"	Copper	CER1808
1000	16	5/8"	Copper	CER1810
1200	16	5/8"	Copper	CER1812
1300	16	5/8"	Copper	CER1813
1500	16	5/8"	Copper	CER1815
1800	16	5/8"	Copper	CER1818
2000	16	5/8"	Copper	CER1820
2400	16	5/8"	Copper	CER1824
2500	16	5/8"	Copper	CER1825
3000	16	5/8"	Copper	CER1830
500	17.2	3/4"	Copper	CER2005
800	17.2	3/4"	Copper	CER2008
1300	17.2	3/4"	Copper	CER2013
3000	17.2	3/4"	Copper	CER2030
500	14.2	5/8"	Aluminium	AER1605
1000	14.2	5/8"	Aluminium	AER1610
1300	14.2	5/8"	Aluminium	AER1613
2000	14.2	5/8"	Aluminium	AER1620
800	17.2	3/4"	Aluminium	AER2008
1300	17.2	3/4"	Aluminium	AER2013



### Copper Bonded Elevation Rod

Manufactured From: Mild Steel To Is 2062, Grade 'e250' Quality 'a' / Astm A36/ En100z5-2 S275jr

Finish : Electrolytic Copper Bonded (20-25 MICRONS)

Rod Length mm	Rod Dia. mm	Thread Dia. Inch	Material	E-Code
500	13.7	5/8"	Mild Steel	CBER0516TRE
1000	13.7	5/8"	Mild Steel	CBER1016TRE
1200	13.7	5/8"	Mild Steel	CBER1216TRE
1500	13.7	5/8"	Mild Steel	CBER1516TRE
1800	13.7	5/8"	Mild Steel	CBER1816TRE
2000	13.7	5/8"	Mild Steel	CBER2016TRE



## Air Termination

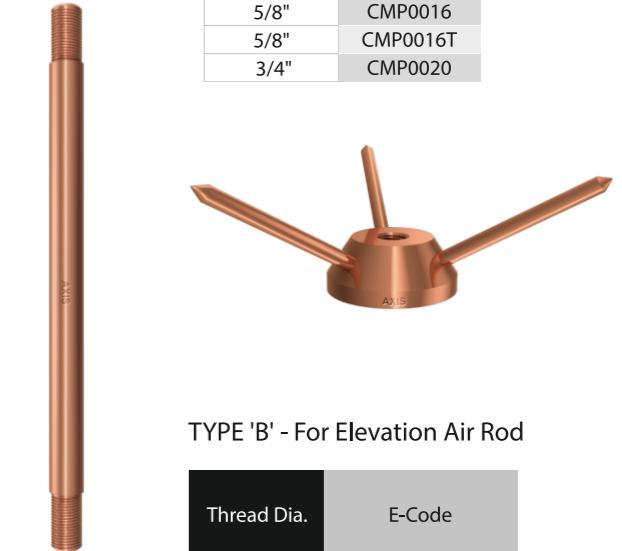
### Copper Bonded Elevation Rod - 250 microns

Material: Mild Steel To Is 2062, Grade 'e250' Quality 'a' / Astm A36/ En100z5-2 S275jr

Finish : Electrolytic Copper Bonded (250 Microns)

Rod Length mm	Rod Dia. mm	Thread Dia. Inch	E-Code
300	14.2	5/8"	CBR1603
500	14.2	5/8"	CBR1605
600	14.2	5/8"	CBR1606
900	14.2	5/8"	CBR1609
1000	14.2	5/8"	CBR1610
1200	14.2	5/8"	CBR1612
1300	14.2	5/8"	CBR1613
1500	14.2	5/8"	CBR1615
1600	14.2	5/8"	CBR1616
1800	14.2	5/8"	CBR1618
2000	14.2	5/8"	CBR1620
2200	14.2	5/8"	CBR1622
3000	14.2	5/8"	CBR1630
300	16	5/8"	CBR1803
500	16	5/8"	CBR1805
600	16	5/8"	CBR1806
900	16	5/8"	CBR1809
1000	16	5/8"	CBR1810
1200	16	5/8"	CBR1812
1300	16	5/8"	CBR1813
1500	16	5/8"	CBR1815
1600	16	5/8"	CBR1816
1800	16	5/8"	CBR1818
2000	16	5/8"	CBR1820
2200	16	5/8"	CBR1822
3000	16	5/8"	CBR2030
300	17.2	3/4"	CBR2003
500	17.2	3/4"	CBR2005
600	17.2	3/4"	CBR2006
900	17.2	3/4"	CBR2009
1000	17.2	3/4"	CBR2010
1200	17.2	3/4"	CBR2012
1300	17.2	3/4"	CBR2013
1500	17.2	3/4"	CBR2015
1600	17.2	3/4"	CBR2016
1800	17.2	3/4"	CBR2018
2000	17.2	3/4"	CBR2020
2200	17.2	3/4"	CBR2022
3000	17.2	3/4"	CBR2030

NOTE: OTHER SIZES AVAILABLE ON REQUEST



Type - B

TYPE 'B' - For Elevation Air Rod

Thread Dia.	E-Code
5/8"	CMP0016 (AEL40002+AEL2004+AEL2005)
3/4"	CMP0020 (AEL40003+AEL2004+AEL2005)

## Air Termination

### Strike Pad

Strike pads are used where it is not possible or preferred to attach conductors on the roof or side of the building. Applications like ware houses or Multi-story parking garages, where the conductors are laid into the tarmac, or the side of the building, but not possible to run the conductor outside.

Finish : Natural & Clean

Diameter	Height	Material	Code
112	20	Aluminium	SPA120
		Aluminium	SPA120WF
		Brass	SPB120
		Brass	SPB120WF
		Stainless Steel	SPS120



### Air Terminal Base - Self Supporting

Suitable for fixing and holding Air Rods onto flat roofs.

Material : SS-304

Finish : Natural & Clean

Rod Diameter mm	Code
10 - 16 mm	AEL91163



Suitable for holding air rod on tapper roof

Material : SS-304

Finish : Natural & Clean

Rod Diameter mm	Code
10 - 16 mm	AEL91177



Suitable for fixing and holding Air Rods on side wall.

Material : SS-304

Finish : Natural & Clean

Rod Diameter mm	Code
10-22 mm	AEL91169V1



Suitable for holding Air Rod with seaming roof.

Material : SS-304

Finish : Natural & Clean

Clamp Range mm	Conductor Range mm	Code
Ø 20 - 25 mm	8 - 10 mm	AEL91171



Suitable for fixing and holding Air Rods on pipes.

Material : SS-304

Finish : Natural & Clean

Rod Diameter mm	Strap Length	Code
10 - 16 mm	1000 mm	AEL91184



### Air Termination with Tripod

Suitable for fixing and holding Air Rods onto flat roofs.

Material : Epoxy Coated Steel

Finish : Natural & Clean

Rod Diameter mm	Support	Space requirement	Code
16 - 22 mm	Ø 40 mm		AEL91300

Suitable for fixing and holding Air Rods with wedges onto flat roofs with or without protective cover it can also be used with tripod stand.

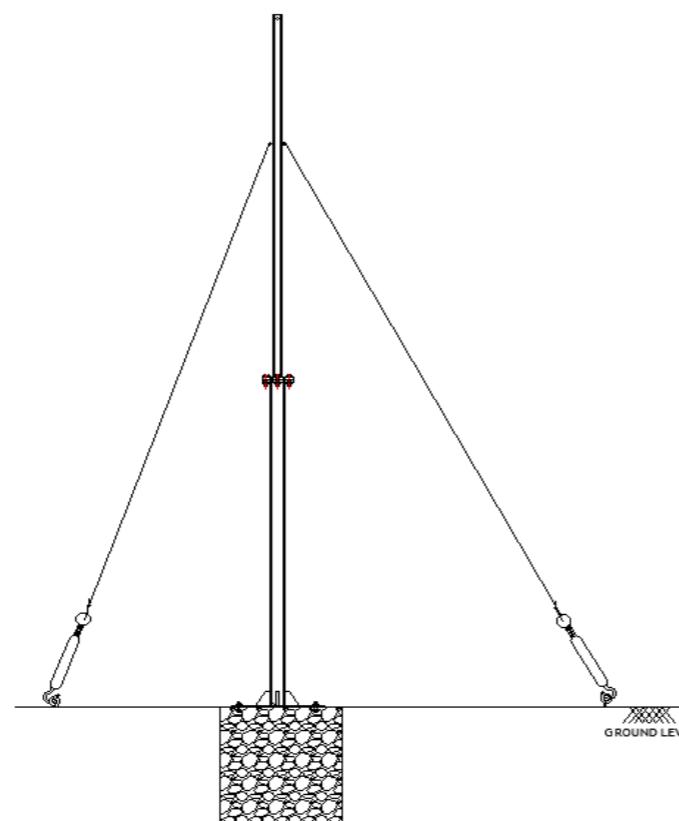
Rod Diameter mm	Block Weight	Material	Code
10 - 16 mm	17 kg	Concrete	AEL91175
0	0	Engineering Polymer	AEL91192



## Air Termination

### Air Termination with Mast

Adaptor Thread Size	Mast Length (in Mtr)	Code
5/8"	2	AMAST582
	3	AMAST583
	4	AMAST584
	5	AMAST585
	6.5	AMAST586
	7.5	AMAST587
	8	AMAST588
	10	AMAST5810
	12	AMAST5812
	2	AMAST342
	3	AMAST343
	4	AMAST344
3/4"	5	AMAST345
	6.5	AMAST346
	7.5	AMAST347
	8	AMAST348
	10	AMAST3410
	12	AMAST3412
	2	AMAST12
	3	AMAST13
	4	AMAST14
	5	AMAST15
	6.5	AMAST16
	7.5	AMAST17
1"	8	AMAST18
	10	AMAST110
	12	AMAST112



NOTE: HOLE SHALL BE PROVIDED IN ADAPTOR INSTEAD OF THREAD.

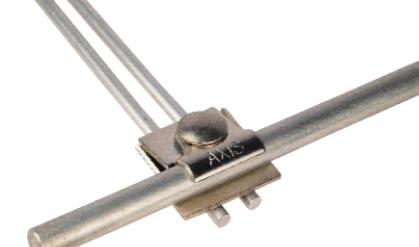
### Air Rod to Conductor Connectors

Suitable for connecting air rod to down conductor

Material : SS-304

Finish : Natural & Clean

Rod Diameter mm	Conductor Dia mm	Code
16 mm	8 - 10 mm	AEL91146



## Down Conductor

### Aluminium Round Conductors

Used as a external down conductor for lightning protection systems

Material : Aluminium

Conductor dia	Code
8 mm Solid	BARH08
10 mm Solid	BARH10



### Copper Clad steel Round Conductors

Used as a down conductor with reinforcements for lightning protection systems and Earth terminations

Material : Steel

Fastners : Copper Plating

Conductor dia	Copper Coating	Code
8 mm Solid	100 microns	CCSR5020
8 mm Solid	250 microns	CCSR5040
10 mm Solid	100 microns	CCSR7020
10 mm Solid	250 microns	CCSR7040



### Expansion Piece

Usually connected between long running conductors to compensate length variation due to temperature fluctuations

Material : Aluminium

Fastners : Natural & Clean

Rod Dia	Code
8 mm Solid	EXP008
(with Connection Clamps)	EXP008K

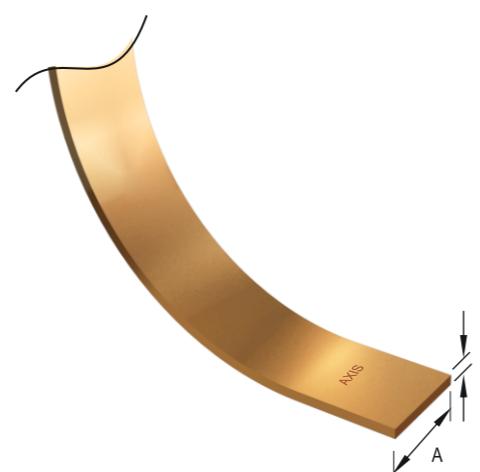


## Down Conductor

### Copper Flat Tapes

Copper Tapes are manufactured from high conductivity EC grade Copper.

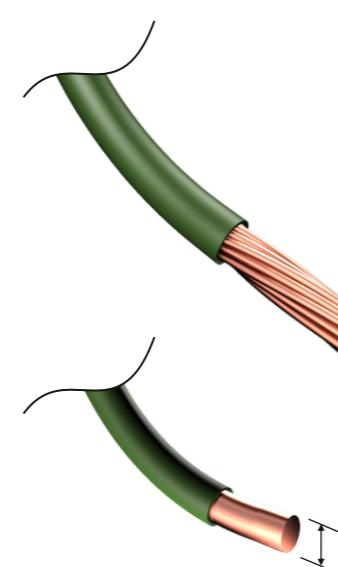
Tape Size (A x B) mm	E-Code
12.5 x 1.5	ECT0121
12.5 x 3	ECT0123
20 x 1.5	ECT0201
20 x 3	ECT0203
25 x 1.5	ECT0251
25 x 3	ECT0253
25 x 4	ECT0254
25 x 6	ECT0256
30 x 3	ECT0303
30 x 6	ECT0306
38 x 3	ECT0383
38 x 5	ECT0385
38 x 6	ECT0386
40 x 4	ECT0404
40 x 6	ECT0406
50 x 3	ECT0503
50 x 4	ECT0504
50 x 6	ECT0506



NOTE : OTHER SIZES AVAILABLE ON REQUEST

### Insulated Copper Conductors

Conductor Size mm <sup>2</sup>	No. Of Stranding / Wire Dia. mm	E-Code
16	7/1.7	PSC0016
25	7/2.14	PSC0025
35	7/2.52	PSC0035
50	19/1.78	PSC0050
70	19/2.14	PSC0070
95	19/2.52	PSC0095
120	37/2.03	PSC0120
150	37/2.25	PSC0150
185	37/2.52	PSC0185
240	61/2.25	PSC0240
300	61/2.52	PSC0300
400	61/2.85	PSC0400



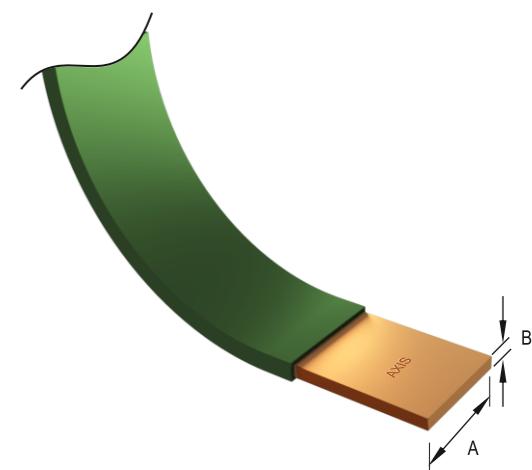
## Down Conductor

### Insulated Copper Tape

High conductivity copper tapes, PVC covered.

Tape Size (A x B) mm	E-Code
12.5 x 1.5	PCT0121
12.5 x 3	PCT0123
20 x 1.5	PCT0201
20 x 3	PCT0203
25 x 1.5	PCT0251
25 x 3	PCT0253
25 x 4	PCT0254
25 x 6	PCT0256
30 x 3	PCT0303
30 x 6	PCT0306
38 x 3	PCT0383
38 x 5	PCT0385
38 x 6	PCT0386
40 x 4	PCT0404
40 x 6	PCT0406
50 x 3	PCT0503
50 x 4	PCT0504
50 x 6	PCT0506

NOTE : OTHER SIZES AVAILABLE ON REQUEST



### Round Conductor Holders

Insulated options to snap and hold round conductors on terrace, parapet and side walls either by screwing, or gluing with different mounting options

Conductor dia	Separation	Material	Code
8-10mm	20 mm	Thermoplastic	AEL90696M
8-10mm	70 mm	Lightweight polymer	AEL90822



Suitable for hook on screws of Industrial roofs and sheds to hold down conductor with different mounting accessories

Material : SS-304  
Finish : Natural & Clean

Mounting Screw	Code
M6 x 12MM	AEL91288



## Down Conductor

Metallic options to hold round conductors on terrace, parapet and side walls either by screwing, or gluing with different mounting options

Material : SS-304  
Finish : Natural & Clean

Conductor Size	Mounting Arrangement	Code
8-10 mm	Screwing	DCSR0810
8-10 mm	Screwing with Base	DCSR0810SB
8-10 mm	Gluing	DCSR0810GB



## Flat Conductor Holders

Metallic options to hold Flat tape on terrace, parapet and side walls either by screwing, or gluing with different mounting options

Material : SS-304  
Finish : Natural & Clean

Tape size	Mounting Arrangement	Code
20-30mm	Screwing	TCS0030
20-30mm	Screwing	DCSF030
20-30mm	Screwing with Base	DCSF030SB
20-30mm	Gluing	DCSF030GB



Metallic options to hold Flat tape on terrace, parapet and side walls by screwing.

Material : Mild steel  
Fasteners : HDG  
Finish : Natural & Clean

Tape size	Thickness	Code
25X6 mm	1.5 mm	TCS0256HDG
50x10 mm	1.5 mm	TCS05010HDG
50x6 mm	1.5 mm	TCS0506HDG
75x10 mm	1.5 mm	TCS07510HDG

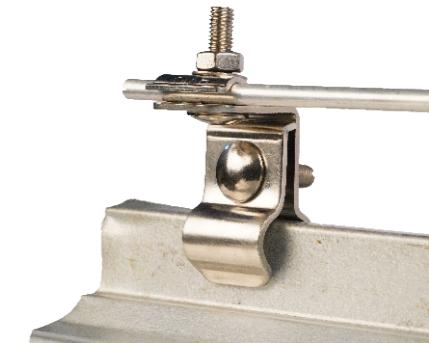


## Conductor Clamp for Seam Roof

Suitable for holding conductor with seaming roof

Material : SS - 304  
Finish : Natural & Clean

Clamping Range	Conductor dia	Code
1.5 - 25 mm	8-10mm	AEL91170



## Conductor Connectors

Suitable for connecting two round conductors in parallel

Material : SS-304  
Finish : Natural & Clean

Conductor dia	Code
8-10mm	SPG0810



Used as a universal round conductor connector to make parallel or T/Cross joint.

Material : SS-304  
Finish : Natural & Clean

Conductor dia	Code
1x, 8-10 mm	UCS0810
2x, 8-10 mm	UCS0810C2



## Down Conductor

Used as a round conductor connector to make T/Cross joint.

Material : SS-304  
Finish : Natural & Clean

Tape width	Code
8-10 mm	SSQ0810
8-10 mm	SSQ0810P



Used as a flat conductor connector to make T/Cross joint.

Material : SS-304  
Finish : Natural & Clean

Tape width	Code
30 mm	STCS0253



Used as a round to flat conductor connector and also as a test link between down conductor and earthing system.

Material : SS-304  
Finish : Natural & Clean

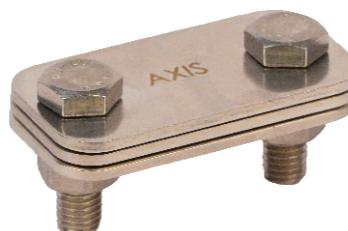
Conductor dia	Conductor dia	Code
8-10 mm	30 mm	RFC0825P
8-10 mm	40 mm	RFC0825P



Used as a flat to flat conductor connector and also as a test link between down conductor and earthing system.

Material : SS-304  
Finish : Natural & Clean

Tape width	Code
30 mm	FFC030P



## Conductor Holder Clamp for Round Column/Handrail

Used for equipotential bonding of Pipes with conductor

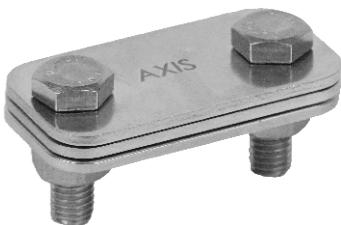
Material : Aluminium  
Fastners : Natural & Clean

Conductor dia	Pipe dia	Code
8-10 mm	50-75mm	PEC001403V3



## Disconnecting Link

Description	Length (mm)	E-Code
DISCONNECTING LINK	125	DL001



## Lightning Counter

DIGITAL COUNTER SIZE	NO. OF DIGITS	Code
80X80X56 mm	2	ADLEC2
100X68X50 mm	6	ADLEC6



## Structural Earthing

### Earth Point

Suitable for Installation into Concrete as earth termination and to facilitate Protective Equi-potential bonding to earth through structure reinforcements.

Material : SS-304  
 Fastners : SS-304  
 Finish : Natural & Clean

Thread Size	Tail length	Code
M10	200 mm	AEL91299



### Diagonal Clamp

Suitable for cross and T connection of Rebar and Rod

Material : SS-304  
 Fastners : SS-304  
 Finish : Natural & Clean

Rebar size	Rod size	Code
10 to 20 mm	8 to 10 mm	AEL91304
8 to 10 mm	8 to 10 mm	AEL91309



### U-bolt Rebar to Conductor Clamps

Suitable to connect Rebar to Solid or stranded Round down conductors

Material : SS-304  
 Fastners : SS-304  
 Finish : Natural & Clean

Rebar size	Conductor Size	Code
16 to 25 mm	8 to 10 mm	URCS2510
20 to 35 mm	8 to 10 mm	URCS3510

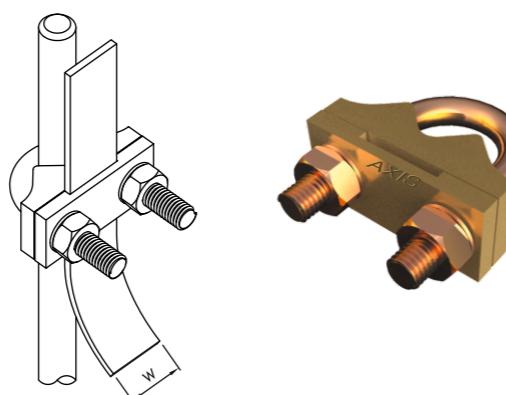


### U-bolt Rod Clamps - Type 'E' with Double Plate

suitable for connecting copper tapes to the rods

Material : High Grade Copper Alloy  
 Bolt : Copper Plated Copper Alloy

Rod Dia mm	Tape Size 'W' mm	E-Code
9.5 - 12.5	25	URC1225EP
14.2 to 16	25	URC1625EP
17.2 to 20	25	URC2025EP
20 to 25	50	URC2550EP



## Earthing

### Copper Bonded Earth Rods (Threaded)



#### Copper Bonded Earth Rods - Sectional

Axis Copper Bonded Earth Rods Have A Core Of High Tensile Low Carbon Steel With Each Rod Made By Molecularly Bonding 99.9% Pure Electrolytic Copper. Threads On The Rods Are Normally Formed By A Roll Threading Process Giving Strength To The Threads & Eliminating Risk Of Chipping Of Threads While Driving The Rod Into The Ground. These Rods Are Tested In Accordance To UL 467 And IEC 62561-2 Standard.

Ground Rod Data			E-Code
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	
12.7	1/2"	2440	CBR1224TUL
12.7	1/2"	3000	CBR1230TUL
12.7	1/2"	3600	CBR1236TUL
12.7	9/16"	2440	CBR1424TUL
12.7	9/16"	3000	CBR1430TUL
12.7	9/16"	3600	CBR1436TUL
14.2	5/8"	2440	CBR1624TUL
14.2	5/8"	3000	CBR1630TUL
14.2	5/8"	3600	CBR1636TUL
16	5/8"	2440	CBR1824TUL
16	5/8"	3000	CBR1830TUL
16	5/8"	3600	CBR1836TUL
17.2	3/4"	2440	CBR2024TUL
17.2	3/4"	3000	CBR2030TUL
17.2	3/4"	3600	CBR2036TUL
19	3/4"	2440	CBR2224TUL
19	3/4"	3000	CBR2230TUL
19	3/4"	3600	CBR2236TUL
25	1"	2440	CBR2524TUL
25	1"	3000	CBR2530TUL
25	1"	3600	CBR2536TUL



#### NOTE:

1. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.
2. DIFFERENT LENGTHS CAN BE PROVIDED ON REQUEST.



## Earthing

### Copper Bonded Earth Rods (Threaded) Kit



Axis Copper Bonded Earth Rod Kit includes 2 Earth Rods and 1 Coupler. This kit is UL Listed as a set.

Ground Rod Data			E-Code
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	
12.7	1/2"	2440 (1220+1220)	CBR1224TKUL
12.7	1/2"	3000 (1500+1500)	CBR1230TKUL
12.7	1/2"	3600 (1800+1800)	CBR1236TKUL
12.7	9/16"	2440 (1220+1220)	CBR1424TKUL
12.7	9/16"	3000 (1500+1500)	CBR1430TKUL
12.7	9/16"	3600 (1800+1800)	CBR1436TKUL
14.2	5/8"	2440 (1220+1220)	CBR1624TKUL
14.2	5/8"	3000 (1500+1500)	CBR1630TKUL
14.2	5/8"	3600 (1800+1800)	CBR1636TKUL
16	5/8"	2440 (1220+1220)	CBR1824TKUL
16	5/8"	3000 (1500+1500)	CBR1830TKUL
16	5/8"	3600 (1800+1800)	CBR1836TKUL
17.2	3/4"	2440 (1220+1220)	CBR2024TKUL
17.2	3/4"	3000 (1500+1500)	CBR2030TKUL
17.2	3/4"	3600 (1800+1800)	CBR2036TKUL
19	3/4"	2440 (1220+1220)	CBR2224TKUL
19	3/4"	3000 (1500+1500)	CBR2230TKUL
19	3/4"	3600 (1800+1800)	CBR2236TKUL
25	1"	2440 (1220+1220)	CBR2524TKUL
25	1"	3000 (1500+1500)	CBR2530TKUL
25	1"	3600 (1800+1800)	CBR2536TKUL

#### Coupler for Ground Rod

Nominal Thread Size (Inch)	E-Code
1/2"	CC0012TUL
9/16"	CC0916TUL
5/8"	CC0058TUL
3/4"	CC0034TUL
1"	CC0001TUL

#### Driving Bolt

Thread Size (Inch)	E-Code
1/2"	DB0012
9/16"	DB0916
5/8"	DB0058
3/4"	DB0034
1"	DB0001

#### NOTE:

1. COUPLER SHOULD BE USE WITH THE RESPECTIVE ROD (THREAD) SIZE.
2. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.

## Earthing

### Copper Bonded Earth Rods (Unthreaded)



AXIS Copper Bonded Earth Rods have a core of high tensile low carbon steel with each rod made by molecularly bonding 99.9% Pure Electrolytic Copper. These rods are tested in accordance to UL 467 and IEC 62561-2 Standard.

Ground Rod Data			E-Code
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	
12.7	9/16"	2400	CBR1424PUL
12.7	9/16"	3000	CBR1430PUL
12.7	9/16"	3600	CBR1436PUL
14.2	5/8"	2400	CBR1624PUL
14.2	5/8"	3000	CBR1630PUL
14.2	5/8"	3600	CBR1636PUL
16	5/8"	2400	CBR1824PUL
16	5/8"	3000	CBR1830PUL
16	5/8"	3600	CBR1836PUL
17.2	3/4"	2400	CBR2024PUL
17.2	3/4"	3000	CBR2030PUL
17.2	3/4"	3600	CBR2036PUL
19	3/4"	2400	CBR2224PUL
19	3/4"	3000	CBR2230PUL
19	3/4"	3600	CBR2236PUL
25	1"	2400	CBR2524PUL
25	1"	3000	CBR2530PUL
25	1"	3600	CBR2536PUL

#### NOTE:

1. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.
2. DIFFERENT LENGTHS CAN BE PROVIDED ON REQUEST.



## Earthing

### Copper Bonded Earth Rods (Unthreaded) Kit



The Axis Copper Bonded Earth Rod Kit includes 2 Grounds and 1 Coupler. This kit is UL Listed as a set.

Ground Rod Data		
Rod Dia (mm)	Total Length (mm)	E-Code
12.7	2440 (1220+1220)	CBR1424PKUL
12.7	3000 (1500+1500)	CBR1430PKUL
12.7	3600 (1800+1800)	CBR1436PKUL
14.2	2440 (1220+1220)	CBR1624PKUL
14.2	3000 (1500+1500)	CBR1630PKUL
14.2	3600 (1800+1800)	CBR1636PKUL
17.2	2440 (1220+1220)	CBR2024PKUL
17.2	3000 (1500+1500)	CBR2030PKUL
17.2	3600 (1800+1800)	CBR2036PKUL
25	2440 (1220+1220)	CBR2524PKUL
25	3000 (1500+1500)	CBR2530PKUL
25	3600 (1800+1800)	CBR2536PKUL



#### COUPLERS PRESS FIT FOR UNTHREADED RODS

Made up of Copper Alloy

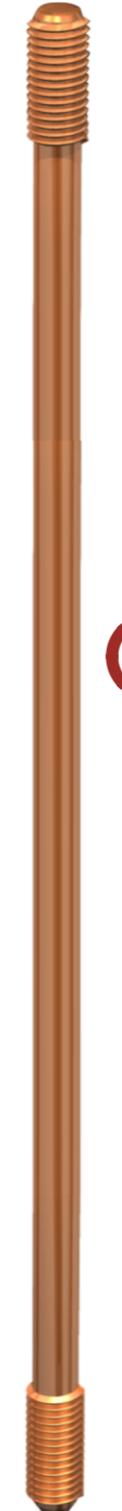
Nominal Size (Inch)	E-Code
1/2"	CC0916PUL
5/8"	CC0058PUL
3/4"	CC0034PUL
1"	CC0001PUL

#### NOTE:

1. COUPLER SHOULD BE USED WITH THE RESPECTIVE ROD SIZE.
2. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.

## Earthing

### Pure Copper Earth Rods (Threaded)



AXIS Solid Copper Earth Rods are made from high conductivity hard drawn copper. They are ideally suited to soil conditions that are very corrosive, such as soil with high salt & moisture content. These rods are also available with tin plating in order to reduce the risk of oxidation & thus increasing shelf life. Threads on the rods are normally formed by a roll threading process giving strength to the threads & eliminating risk of chipping of threads while driving the rod into the ground. These rods are tested in accordance to UL 467 and IEC 62561-2 Standard.

Ground Rod Data			E-Code
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	E-Code
12.7	1/2"	2400	ARC1224TUL
12.7	1/2"	3000	ARC1230TUL
12.7	1/2"	3600	ARC1236TUL
12.7	9/16"	2400	ARC1424TUL
12.7	9/16"	3000	ARC1430TUL
12.7	9/16"	3600	ARC1436TUL
14.2	5/8"	2400	ARC1624TUL
14.2	5/8"	3000	ARC1630TUL
14.2	5/8"	3600	ARC1636TUL
16	5/8"	2400	ARC1824TUL
16	5/8"	3000	ARC1830TUL
16	5/8"	3600	ARC1836TUL
17.2	3/4"	2400	ARC2024TUL
17.2	3/4"	3000	ARC2030TUL
17.2	3/4"	3600	ARC2036TUL
19	3/4"	2400	ARC2224TUL
19	3/4"	3000	ARC2230TUL
19	3/4"	3600	ARC2236TUL
25	1"	2400	ARC2524TUL
25	1"	3000	ARC2530TUL
25	1"	3600	ARC2536TUL

#### NOTE:

1. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.
2. DIFFERENT LENGTHS CAN BE PROVIDED ON REQUEST.



## Earthing

### Pure Copper Earth Rods (Threaded) Kit



Ground Rod Data			
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	E-Code
12.7	1/2"	2440 (1220+1220)	ARC1224TKUL
12.7	1/2"	3000 (1500+1500)	ARC1230TKUL
12.7	1/2"	3600 (1800+1800)	ARC1236TKUL
12.7	9/16"	2440 (1220+1220)	ARC1424TKUL
12.7	9/16"	3000 (1500+1500)	ARC1430TKUL
12.7	9/16"	3600 (1800+1800)	ARC1436TKUL
14.2	5/8"	2440 (1220+1220)	ARC1624TKUL
14.2	5/8"	3000 (1500+1500)	ARC1630TKUL
14.2	5/8"	3600 (1800+1800)	ARC1636TKUL
16	5/8"	2440 (1220+1220)	ARC1824TKUL
16	5/8"	3000 (1500+1500)	ARC1830TKUL
16	5/8"	3600 (1800+1800)	ARC1836TKUL
17.2	3/4"	2440 (1220+1220)	ARC2024TKUL
17.2	3/4"	3000 (1500+1500)	ARC2030TKUL
17.2	3/4"	3600 (1800+1800)	ARC2036TKUL
19	3/4"	2440 (1220+1220)	ARC2224TKUL
19	3/4"	3000 (1500+1500)	ARC2230TKUL
19	3/4"	3600 (1800+1800)	ARC2236TKUL
25	1"	2440 (1220+1220)	ARC2524TKUL
25	1"	3000 (1500+1500)	ARC2530TKUL
25	1"	3600 (1800+1800)	ARC2536TKUL

## Earthing

### Pure Copper Earth Rods (Unthreaded)

AXIS Solid Copper Earth Rods are made from high conductivity hard drawn copper. They are ideally suited to soil conditions that are very corrosive, such as soil with high salt & moisture content. These rods are also available with tin plating in order to reduce the risk of oxidation & thus increasing shelf life. These rods are tested in accordance to UL 467 and IEC 62561-2 Standard.



Ground Rod Data			
Rod Dia (mm)	Thread Size (Inch)	Total Length (mm)	E-Code
12.7	9/16"	2400	ARC1424PUL
12.7	9/16"	3000	ARC1430PUL
12.7	9/16"	3600	ARC1436PUL
14.2	5/8"	2400	ARC1624PUL
14.2	5/8"	3000	ARC1630PUL
14.2	5/8"	3600	ARC1636PUL
16	5/8"	2400	ARC1824PUL
16	5/8"	3000	ARC1830PUL
16	5/8"	3600	ARC1836PUL
17.2	3/4"	2400	ARC2024PUL
17.2	3/4"	3000	ARC2030PUL
17.2	3/4"	3600	ARC2036PUL
19	3/4"	2400	ARC2224PUL
19	3/4"	3000	ARC2230PUL
19	3/4"	3600	ARC2236PUL
25	1"	2400	ARC2524PUL
25	1"	3000	ARC2530PUL
25	1"	3600	ARC2536PUL

NOTE:

1. COUPLER CAN BE PROVIDED SEPARATELY ON REQUEST.
2. DIFFERENT LENGTHS CAN BE PROVIDED ON REQUEST.

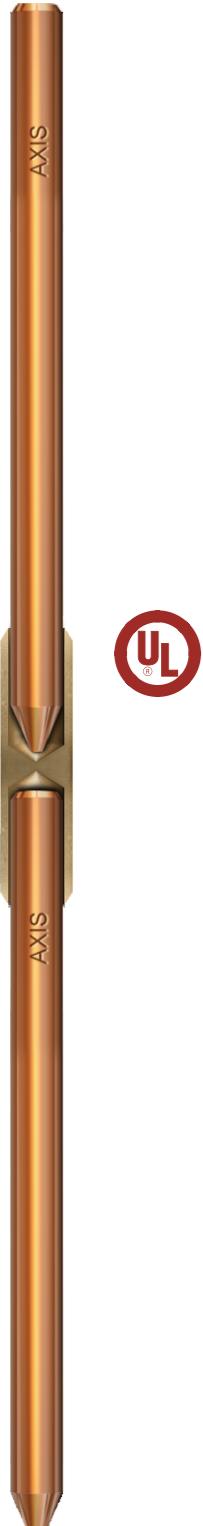
#### Coupler For Ground Rod

Nominal Thread Size (Inch)	E-Code
1/2"	CC0012TUL
9/16"	CC0916TUL
5/8"	CC0058TUL
3/4"	CC0034TUL
1"	CC0001TUL



## Earthing

### Pure Copper Earth Rods (Unthreaded) Kit



Ground Rod Data		
Rod Dia (mm)	Total Length (mm)	E-Code
12.7	2440 (1220+1220)	ARC1424PKUL
12.7	3000 (1500+1500)	ARC1430PKUL
12.7	3600 (1800+1800)	ARC1436PKUL
14.2	2440 (1220+1220)	ARC1624PKUL
14.2	3000 (1500+1500)	ARC1630PKUL
14.2	3600 (1800+1800)	ARC1636PKUL
17.2	2440 (1220+1220)	ARC2024PKUL
17.2	3000 (1500+1500)	ARC2030PKUL
17.2	3600 (1800+1800)	ARC2036PKUL
25	2440 (1220+1220)	ARC2524PKUL
25	3000 (1500+1500)	ARC2530PKUL
25	3600 (1800+1800)	ARC2536PKUL



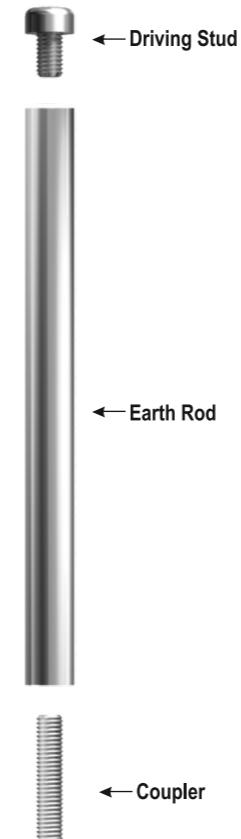
#### Coupler For Ground Rod

Nominal Size (Inch)	E-Code
1/2"	CC0916PUL
5/8"	CC0058PUL
3/4"	CC0034PUL
1"	CC0001PUL

## Earthing

## Earthing

### Stainless Steel Earth Rod (Internal Threading)



Stainless Steel earth rods are used to overcome condition of galvanic corrosion which may be caused due to dissimilar metals being buried near by. Solid copper rods are likely to react adversely with the buried metal, thus allowing corrosion to take place. To overcome this situation, stainless steel rods which are more anodic than copper & highly resistant to corrosion are recommended. These rods are manufactured from austenitic stainless steel to BS970, grade 316.

Rod Dia (mm)	Total Length (mm)	Thread Size (mm)	E-Code
16	1500	M10	SER1615
16	1800	M10	SER1618
16	2400	M10	SER1624
20	1500	M12	SER2015
20	1800	M12	SER2018
20	2400	M12	SER2024

#### Driving Head

Made Up Of Re-usable High Tensile Steel Can Be Used Many Times Over And Suitable For Power Hammering.

Thread Dia	E-Code
M10	DH0010
M12	DH0012

#### Internal Coupling Dowel For Stainless Steel Rods

Made Up Of Stainless Steel

Thread Dia	E-Code
M10	DC0010S
M12	DC0012S

#### Galvanised Steel Earth Rod - Unthreaded & Pointed

These Rods Are Made Up Of High Strength Low Carbon Steel And Hot Dipped Galvanised . This Design Of Rod Is Actually Cost Effective Option For Earthing

Rod Dia (mm)	Total Length (mm)	E-Code
12	1200	GER1212
12	1500	GER1215
12	1800	GER1218
12	2400	GER1224
12	3000	GER1230
14	1200	GER1412
14	1500	GER1415
14	1800	GER1418
14	2400	GER1424
14	3000	GER1430
16	1200	GER1612
16	1500	GER1615
16	1800	GER1618
16	2400	GER1624
16	3000	GER1630
20	1200	GER2012
20	1500	GER2015
20	1800	GER2018
20	2400	GER2024
20	3000	GER2030

#### GALVANISED STEEL EARTH ROD



## Earthing

### Earth Rod clamps

Suitable for connecting earth rods to flat conductors

Material : SS-304  
 Fastners : SS-304  
 Finish : Natural & Clean

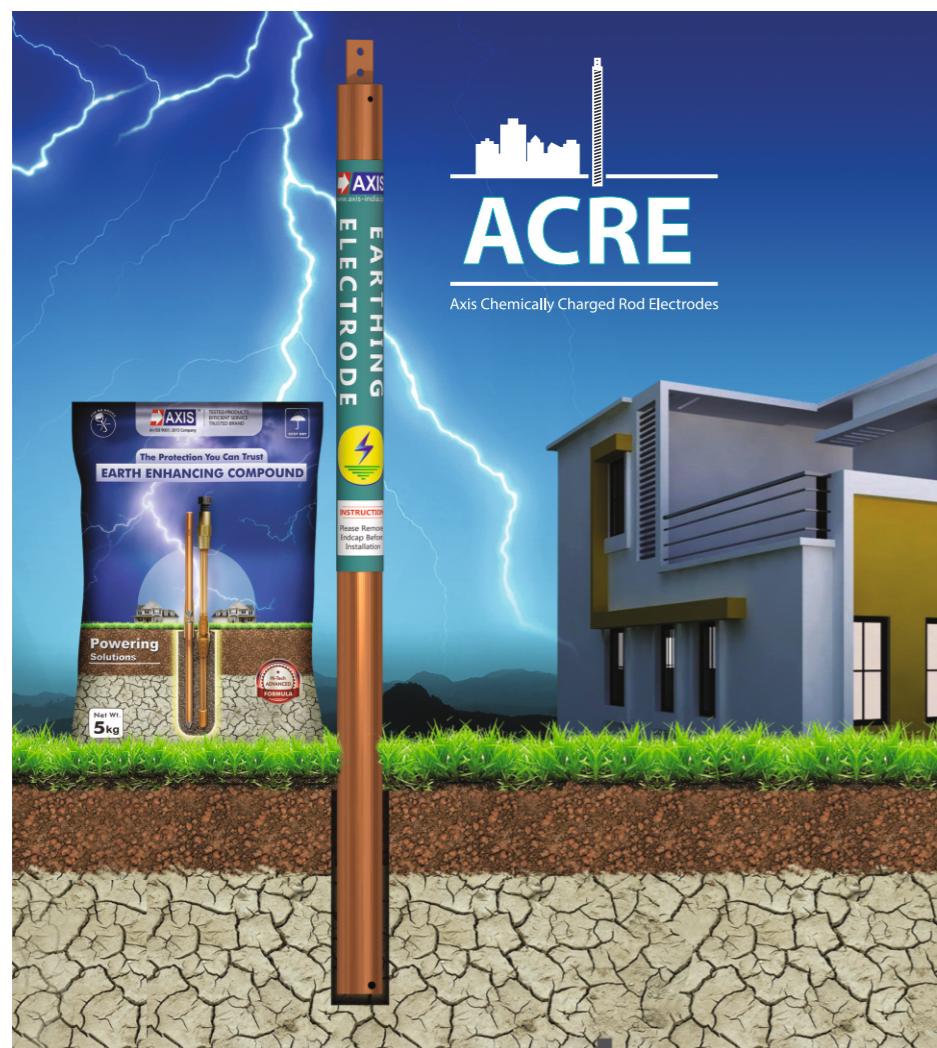
Round Conductor dia	Flat Size	Code
14 to 22mm	25 x 3 mm	AEL91145
18-25 mm	25 x 3 mm	AEL91145V1
14 to 22mm	50 x 6 mm	AEL91357
32-40 mm	30 x 6 mm	AEL91342



### Axis Chemically Charged Rod Electrodes (ACRE)

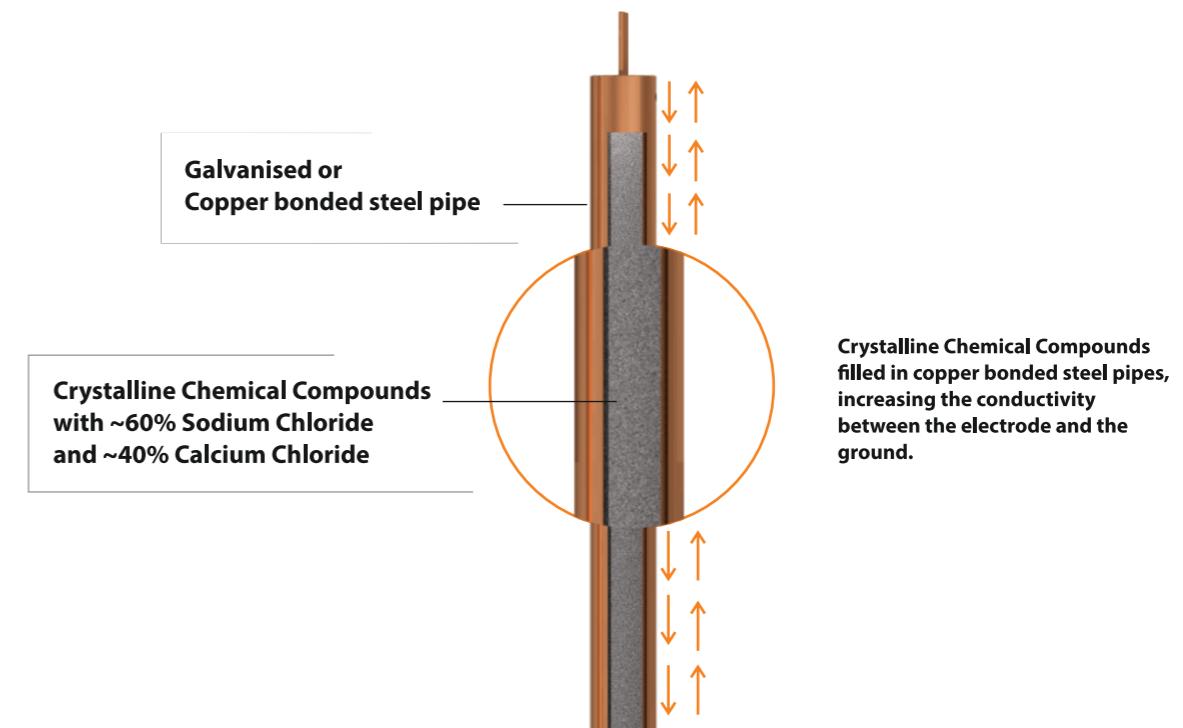
Axis's Chemically Charged Rod Electrodes (ACRE) are made of Galvanised or Copper bonded steel pipes filled with Crystalline Chemical Compounds with ~60% Sodium Chloride and ~40% Calcium Chloride.

This combination permits high conductivity between the electrode and the ground allowing high fault currents to dissipate faster, thus making the structure safe.



## Earthing

### Structure of Chemically Charged Rod Electrode



#### Features & Benefits:

1. Copper Coating makes the electrode highly conductive and reduces risk of corrosion.
2. Withstands high fault currents, increasing service life and reducing maintenance costs.

#### Technical Specification:

Sr. No.	Type	Pipe Diameter (mm)	Length (m)	Item Code
1	PIP	48	3	ACRE4830P
2	PIP	58	3	ACRE5830P
3	PIP	76	3	ACRE7630P
4	PIP	88	3	ACRE8830P
5	SIP	48	3	ACRE4830S
6	SIP	58	3	ACRE5830S
7	SIP	76	3	ACRE7630S
8	SIP	88	3	ACRE8830S
9	SP	48	3	ACRE4830
10	SP	58	3	ACRE5830
11	SP	76	3	ACRE7630
12	SP	88	3	ACRE8830

Note: Rod electrodes are available in different length on request.

PIP = Pipe in Pipe | SIP = Strip in Pipe | SP = Single Pipe



## Light Weight Plastic Earth Pit

Size	E-Code
245 x 245	EPP2424



### Product Specification :

This Axis Polymer Earth housing pit is manufactured from heavy high-grade polypropylene for high strength & Stress levels to absorb a medium load. Stabilised against degradation by non-brittle and by sunlight to prevent cold weather damage. The light weight feature allows easy handling, storage and transportation, thus increasing installation efficiency. Termination area is increased by 100% due to simple locking of two units together, allowing deeper electrode connections to be made and reducing the effects from harmful voltage gradients.

Material : Polymer Body & Cover

Product Code : EPP2424

Dimensions : Outer Size : 245 mm (L) x 245 mm (W) x 195 mm (H)

Inner Size : 160 mm (L) x 160 mm (W) x 165 mm (H)

Weight : 1 kg (2.2 LBS)

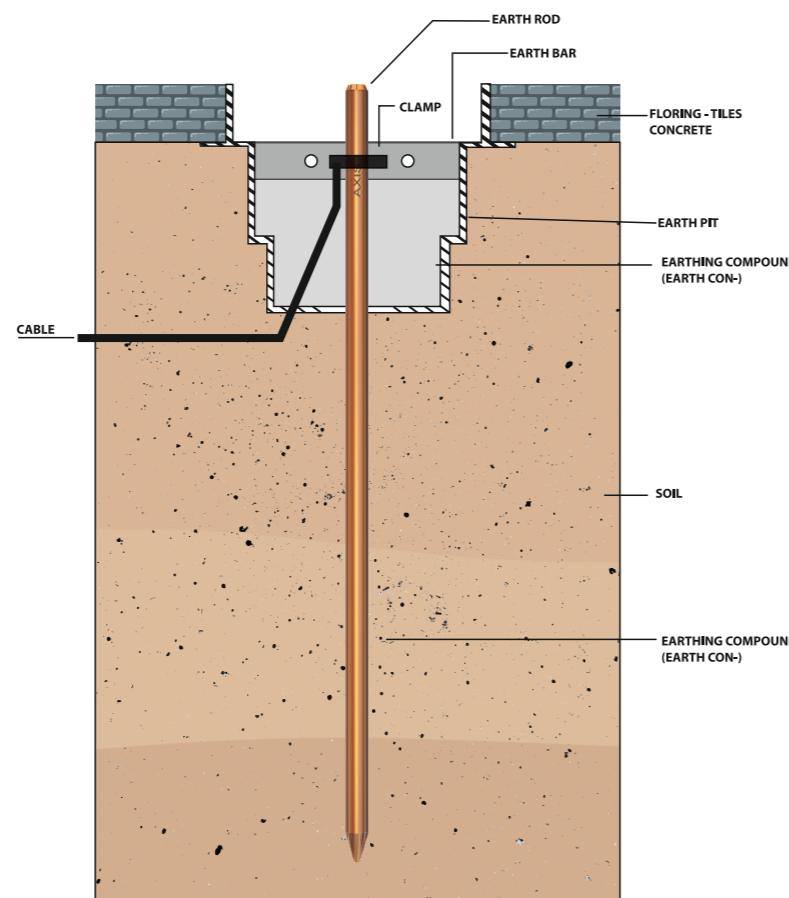
### Suitable For Pipe In Pipe & Earth Rod

#### Certification :

Load Test Report, UV Stability & Other Test  
Please contact us.

#### Compatibility :

IEC 62561-5(2018) Standard & Other Standard  
Please contact us.



## Earthing

## Light Weight Plastic Earth Pit

Size	E-Code
300 x 300	EPP3030



### Product Specification :

This Axis Polymer Earth housing pit is manufactured from heavy high-grade polypropylene for high strength & Stress levels to absorb a maximum load of 5000kg. Stabilized against degradation by non-brittle and by sunlight to prevent cold weather damage. The light weight feature allows easy handling, storage and transportation, thus increasing installation efficiency. Termination area is increased by 100% due to simple locking of two units together, allowing deeper electrode connections to be made and reducing the effects from harmful voltage gradients.

Material : Polymer Body & Cover

Product Code : EPP3030

Dimensions : Outer Size : 308 mm (L) x 308 mm (W) x 215 mm (H)

Inner Size : 200 mm (L) x 200 mm (W) x 150 mm (H)

Weight : 2.5 kg (5.50 LBS)

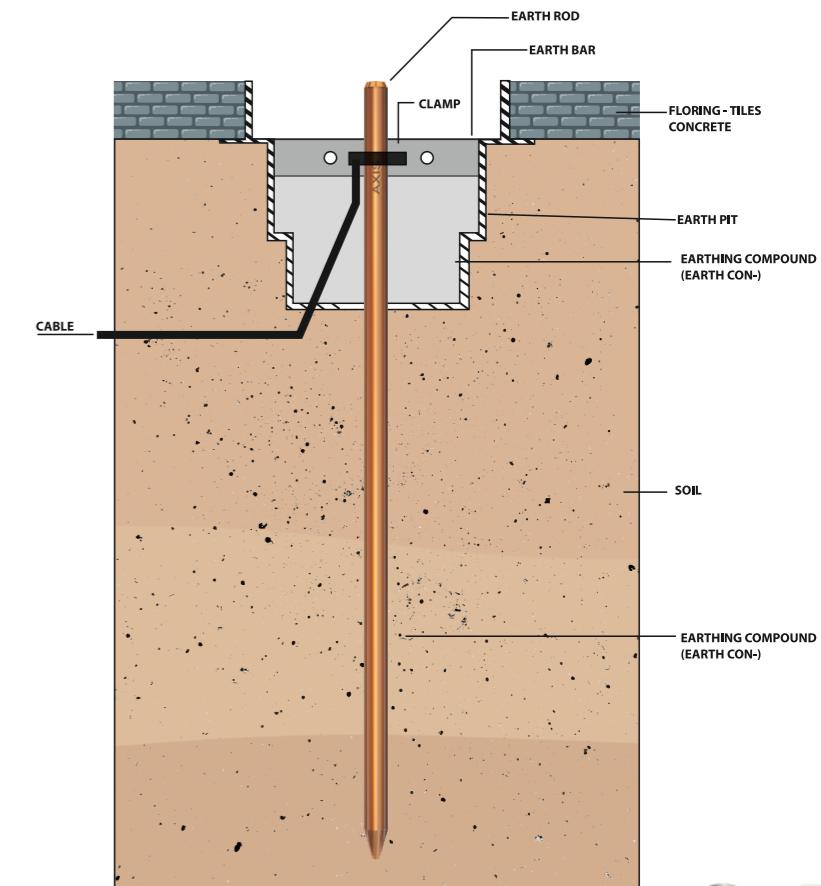
### Suitable For Pipe In Pipe & Earth Rod

#### Certification :

Load Test Report, UV Stability & Other Test  
Please contact us.

#### Compatibility :

IEC 62561-5(2018) Standard & Other Standard  
Please contact us.



## Light Weight Plastic Earth Pit

Size	E-Code
500 x 500	EPP5050



### Product Specification :

This Product Specification : This Axis Polymer Earth housing pit is manufactured from heavy high-grade polypropylene for high strength & Stress levels to absorb a medium load. Stabilised against degradation by non-brittle and by sunlight to prevent cold weather damage. The light weight feature allows easy handling, storage and transportation, thus increasing installation efficiency. Termination area is increased by 100% due to simple locking of two units together, allowing deeper electrode connections to be made and reducing the effects from harmful voltage gradients.

Material : Polymer Body & Cover

Product Code : EPP5050

Dimensions : Outer Size : 500 mm (L) x 500 mm (W) x 315 mm (H))

Inner Size : 400 mm (L) x 400 mm (W) x 280 mm (H)

Weight : 5 kg (11 LBS)

### Suitable For Pipe In Pipe & Earth Rod

### Certification :

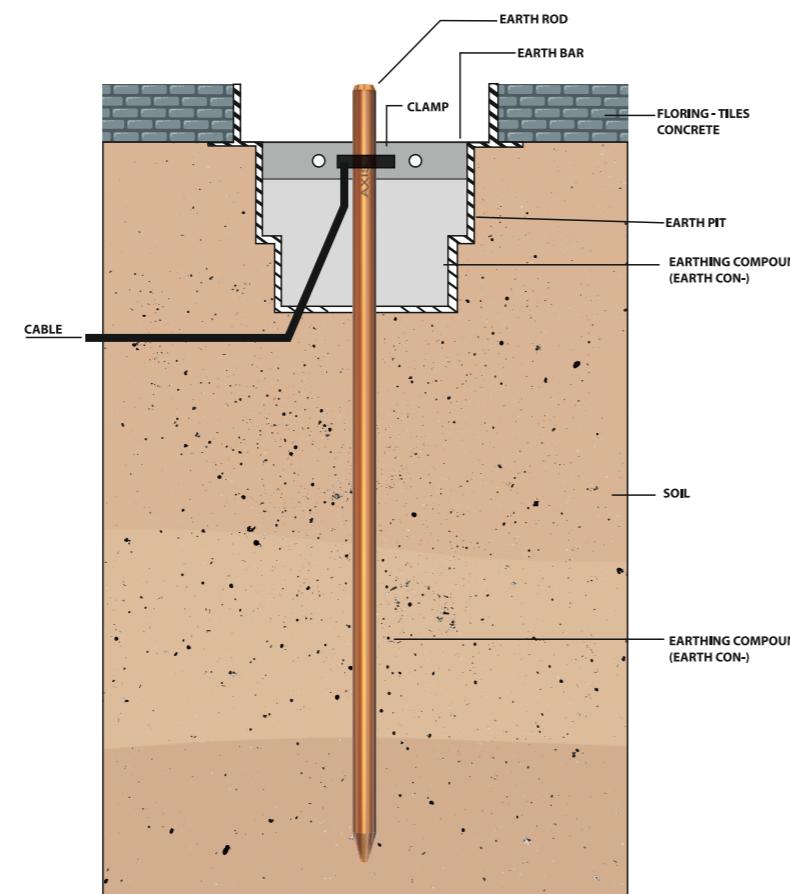
Load Test Report, UV Stability & Other Test

Please contact us.

### Compatibility :

IEC 62561-5(2018) Standard & Other Standard

Please contact us.



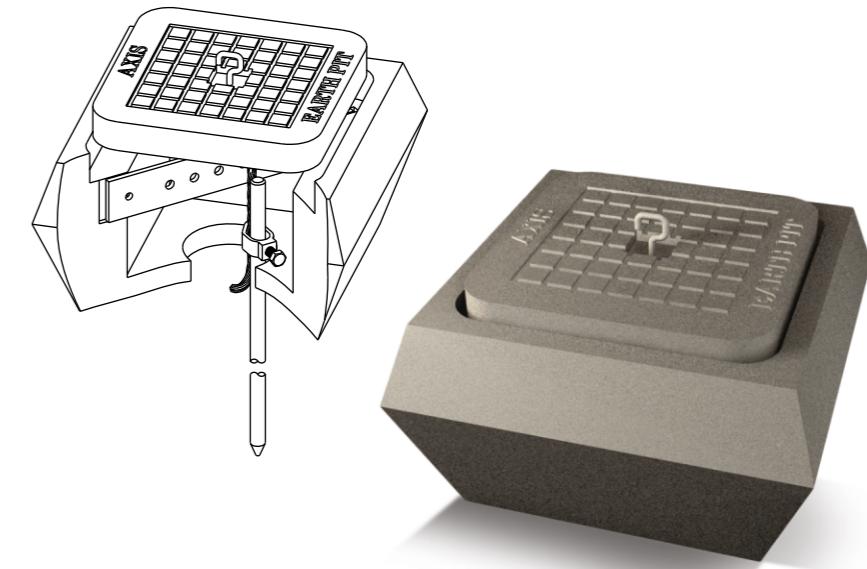
## Earthing

## Concrete Earth Pit

The concrete earth pit is used for load ratings upto 4000 Kgs and is suitable for most types of earthing and lightning protection installations.

The Pit can have an earth bar fitted diagonally across in slots provided for multiple connections.

Description	E-Code
300 x 300	CEP3030



## 'C' Type Connectors - Compression Type

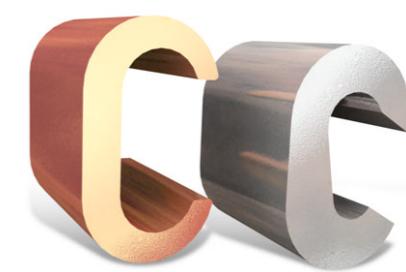
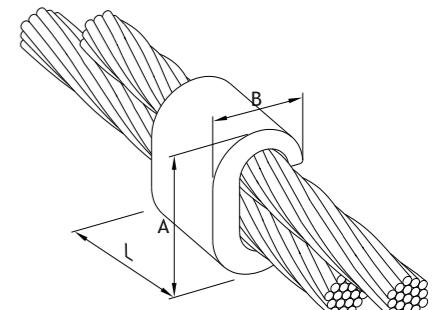
These connectors are used for tap and Parallel connection of stranded copper cable in earthing application and are ideal for making permanent joints where periodic disconnection is not required.

Material : Ec Grade Copper

Finish : Electro Tinned / Untinned

Cable Size In mm	Dimensions In mm			E-Code
	A	B	L	
C25 - C25	20.6	12	21	CC2525C
C35 - C35	26.4	15.4	21	CC3535C
C50 - C50	31	19.8	28	CC5050C
C70 - C70	31	19.8	28	CC7070C
C95 - C95	40	25.5	29	CC9595C
C120 - C120	44	27	31	CC120120C
C150 - C150	44.5	29.7	35	CC150150C
C185 - C185	51.8	30	35	CC185185C
C240 - C240	57.7	33.6	35	CC240240C
C16-35 - 50-70C	33.4	21	23	CC7035C
C25-50 - 70-95C	40.8	26	28	CC9550C

NOTE: OTHER TYPES AND SIZES AVAILABLE ON CUSTOMERS REQUEST.



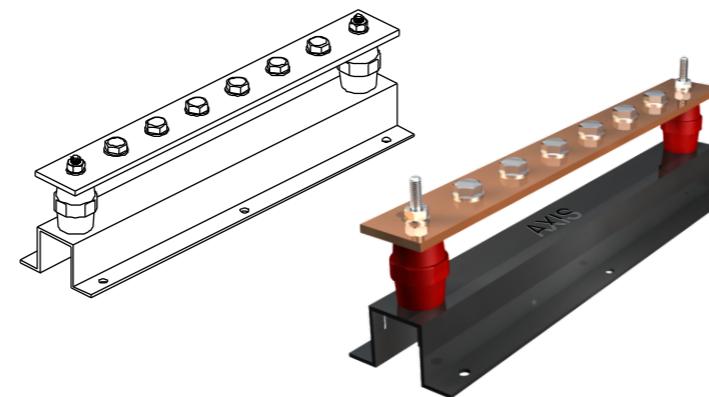
## Earthing

### Earth Bars

Made out of 50 x 6 mm pure copper bar pre-fitted on epoxy powder coated metal or plastic base mounted on insulators.

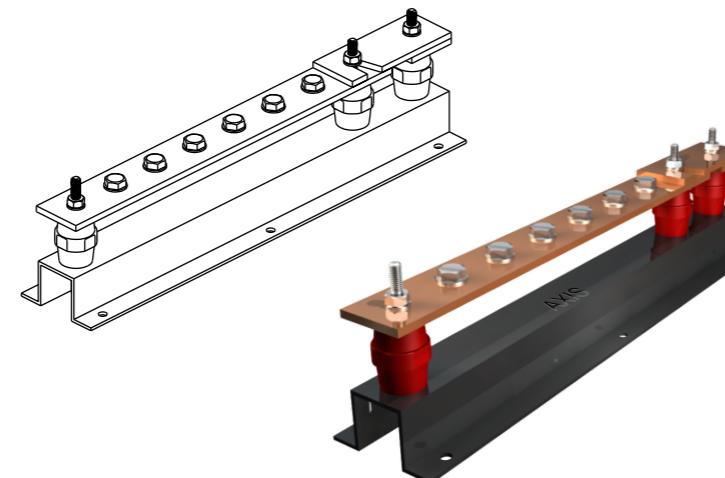
Recommended fixing - round head woodscrew 1-1/2" x no. 16 and wall plug. Range : 6 ways to 24 ways.

Description	Length (mm)	E-Code
6 Way	400	EB006
8 Way	500	EB008
10 Way	600	EB010
12 Way	700	EB012
14 Way	800	EB014
16 Way	900	EB016
18 Way	1000	EB018
20 Way	1100	EB020
22 Way	1200	EB022
24 Way	1300	EB024



### Earth Bars With Single Disconnecting Link

Description	Length (mm)	E-Code
6 Way	475	EBS006
8 Way	575	EBS008
10 Way	675	EBS010
12 Way	775	EBS012
14 Way	875	EBS014
16 Way	975	EBS016
18 Way	1075	EBS018
20 Way	1175	EBS020
22 Way	1275	EBS022
24 Way	1375	EBS024

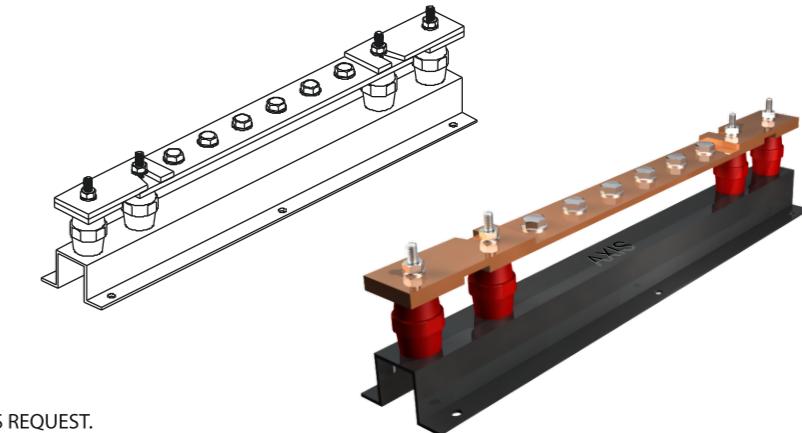


## Earthing

### Earth Bars With Twin Disconnecting Link

Description	Length (mm)	E-Code
6 Way	550	EBD006
8 Way	650	EBD008
10 Way	750	EBD010
12 Way	850	EBD012
14 Way	950	EBD014
16 Way	1050	EBD016
18 Way	1150	EBD018
20 Way	1250	EBD020
22 Way	1350	EBD022
24 Way	1450	EBD024

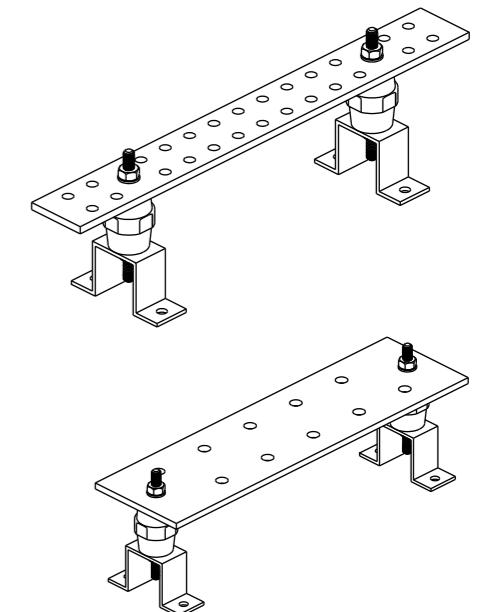
NOTE: OTHER TYPES AND SIZES AVAILABLE ON CUSTOMERS REQUEST.



### Earth Bus Bar For Telecommunication

Bar Size In mm	Length In mm	No. Of M8 Size Holes	No. Of M12 Size Holes	E-Code
50 x 6	750	18	5	EBT506750
50 x 6	650	14	5	EBT506650
50 x 6	500	12	3	EBT506500
50 x 6	450	10	3	EBT506450
50 x 6	400	8	3	EBT506400
50 x 6	350	6	3	EBT506350
100 x 6	750	41	5	EBT1006750
100 x 6	650	33	5	EBT1006650
100 x 6	500	27	3	EBT1006500
100 x 6	450	23	3	EBT1006450
100 x 6	400	19	3	EBT1006400
100 x 6	350	15	3	EBT1006350

NOTE: OTHER TYPES AND SIZES AVAILABLE ON CUSTOMERS REQUEST.

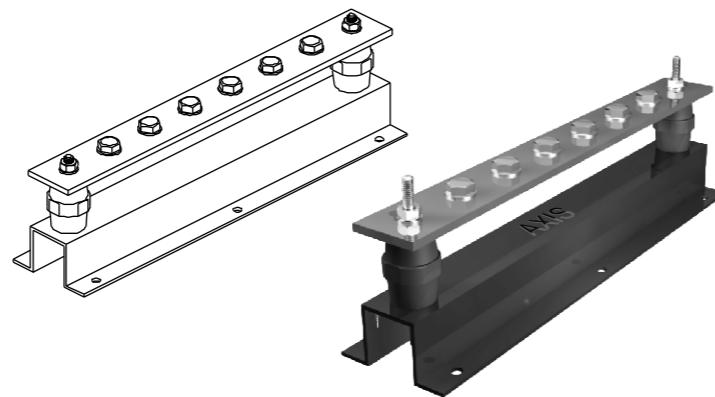


## Earthing

### Earth Bars - Galvanised

Material : MILD STEEL STRIP TO IS 2062, GRADE E250, QUALITY 'A' / BS EN10025-2 GRADE 'S235JR'  
 Finish : Hot Dip Galvanised To Iso 1461 / Bs-729 Shall Be Supplied In A Straight Form (5 Meters Of Length)

FLAT BAR SIZE	W (mm)	T (mm)	E-Code
20 X 2	20	2	AS202HDG
20 X 3	20	3	AS203HDG
25 X 2	25	2	AS252HDG
25 X 3	25	3	AS253HDG
25 X 4	25	4	AS254HDG
25 X 5	25	5	AS255HDG
25 X 6	25	6	AS256HDG
30 X 3	30	3	AS303HDG
30 X 4	30	4	AS304HDG
30 X 5	30	5	AS305HDG
40 X 3	40	3	AS403HDG
40 X 4	40	4	AS404HDG
40 X 5	40	5	AS405HDG
40 X 6	40	6	AS406HDG
50 X 2	50	2	AS502HDG
50 X 3	50	3	AS503HDG
50 X 4	50	4	AS504HDG
50 X 6	50	6	AS506HDG
50 X 10	50	10	AS5010HDG
60 X 4	60	4	AS604HDG
60 X 5	60	5	AS605HDG
60 X 6	60	6	AS606HDG
60 X 8	60	8	AS608HDG
60 X 10	60	10	AS6010HDG
75 X 5	75	5	AS755HDG
75 X 6	75	6	AS756HDG
75 X 10	75	10	AS7510HDG
75 X 12	75	12	AS7512HDG
80 X 5	80	5	AS805HDG
80 X 6	80	6	AS806HDG
80 X 10	80	10	AS8010HDG
80 X 12	80	12	AS8012HDG



All Dimensions are in mm

NOTE: OTHER SIZE ARE AVAILABLE ON REQUEST.

### Earthing Accessories

Used for corrosion protection of joints, fittings above and below ground applications.

Material : Synthetic Fibre, Natural Compound



Tape Size	Code
50x10mm	DT5010

## Earthing

### Axiweld

#### Exothermic welding



**Axiweld**

**Exothermic welding**

AxiWeld Exothermic welding is a simple, cost effective, self contained and portable process of forming high quality and permanent metal-to-metal connections.

The AxiWeld line of products are manufactured and tested in accordance to IEEE 837.

Through this process, connections are made by a reaction of a powdered copper compound and aluminium which allows superheated molten copper alloy to form on and around the conductors to be joined. The final connections are electrically conductive due to their high copper content and have strong corrosion resistant properties.

The exothermic welding process can be used to weld materials for electrical purposes including but not limited to:

Stainless Steel, Brass, Copper, Bronze, Galvanized Steel, Steel Rail, Cast Iron and Copper Clad Steel.


**Tools and Accessories required :**

1. Mould
2. Handle Clamp
3. Welding Powder
4. Retaining Disc
5. Brushes (Cable cleaning brush, Busbar cleaning brush, Mould cleaning brush.)
6. Mould scrapper
7. Mould sealing compound
8. Flint Gun
9. Gloves
10. Safety Glasses
11. Hammer
12. Screw Driver
13. Flat file
14. Combination Plier


**Surge Protection Device (SPD)**


Surge Protection Devices or SPD's are an important part of any building's Internal Lightning Protection System (LPS). SPD's are designed to protect sensitive electronic & electrical equipment by limiting transient overvoltage and diverting surge currents. SPD's are the most efficient and commonly used type of overvoltage protection for any structure.

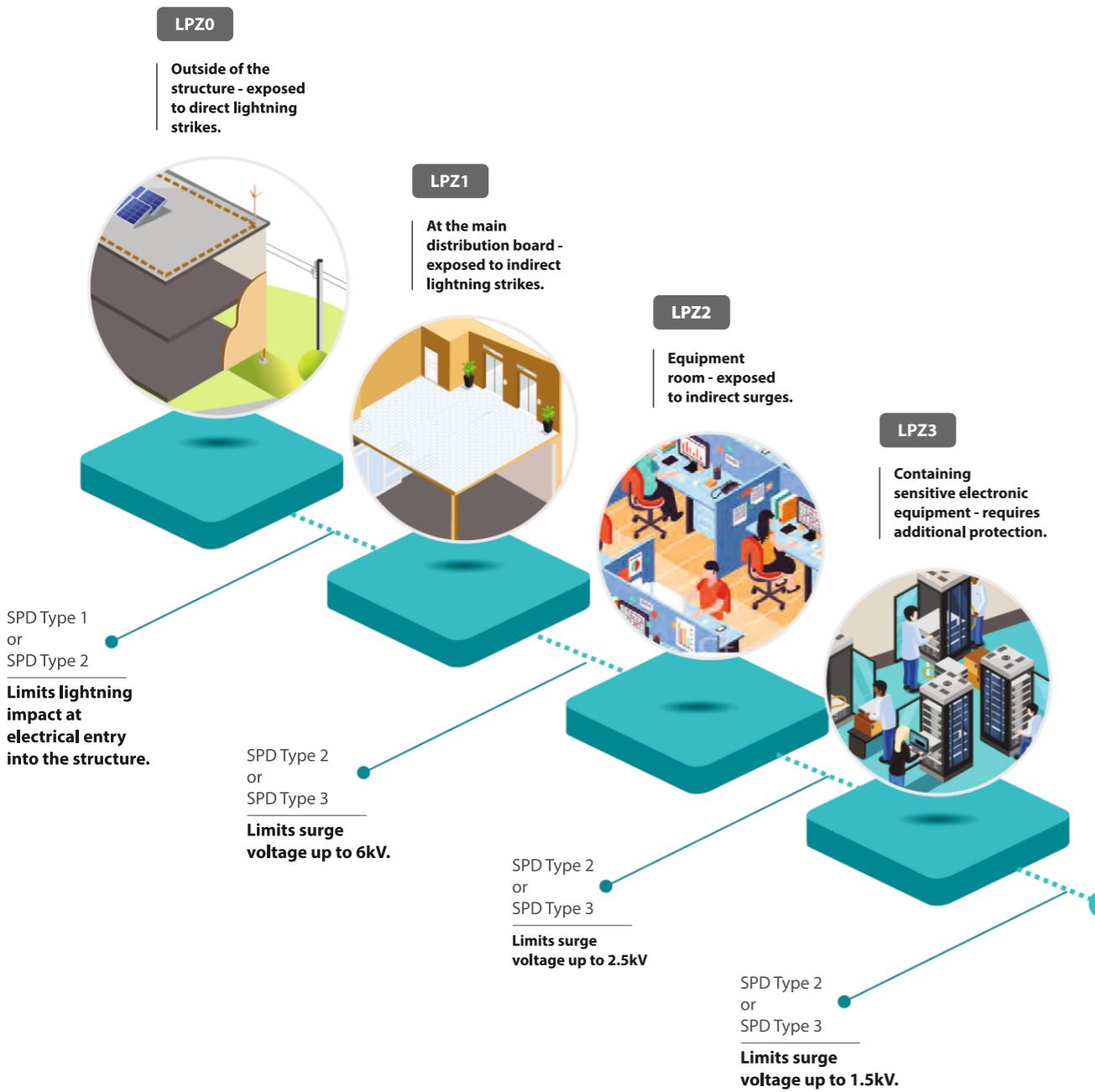


## Surge Protection Device

### Lightning Protection Zones

The placement of SPD's within an electrical system is determined using the Lightning Protection Zones determined for the structure as defined in IEC 62305 Part 4. The external zones (LPZ 0A and LPZ 0B) can only house surge resistant equipment while the internal zones (LPZ 1, LPZ 2,...) can house sensitive equipment such as medical equipment.

Surge Protection Device's (SPD's) are used in areas where a transition takes place between two different LPZ's. For example, a Type 1 or Type 2 SPD would be used at the main power distribution switchboard where the electrical system enters the structure. The table above briefly describes the various LPZ transitions that occur in most structures and how one can choose the SPD Type based on these transitions.



## Surge Protection Device

Sr. no.	Type	Class	Maximum Continuous Operating Voltage (Uc)	Voltage Protection level L-N)/(N/PE) (kV)	Lightning Impulse Current Iimp (kA) per pole	Nominal Discharge Current (In) (kA) per pole	Max Discharge Current ITot(kA) per pole	Response Time (ns)	Power Supply	Phase	E-Code
1	1	B	330V	0.9 kV between phase to neutral and 1.5 kV between neutral to earth	50	50	100	100	415 V AC	Three Phase Application	ASPDA4P3 20100
2	1+2	B+C	320V	1.5 kV between phase to neutral and neutral to earth	12.5	30	60	25	230 V AC	Single Phase Application	ASPDA2P3 2060
3	1+2	B+C	320V	1.5 kV between phase to neutral and neutral to earth	12.5	30	60	25	415 V AC	Three Phase Application	ASPDA4P 32060
4	2	C	320V	1.4 kV between phase to neutral and 1.5 kV between neutral to earth		20	40	25	230 V AC	Single Phase Application	ASPDA2P 32040
5	2	C	320V	1.4 kV between phase to neutral and 1.5 kV between neutral to earth		20	40	25	230 V AC	Three Phase Application	ASPDA4P 32040



## Axis Smart Lightning Arrestors (ASLA)

The ASLA range of Early Streamer Emission (ESE) Lightning Arresters offer a safe and reliable system to protect your building or solar project from direct lightning strikes. The ESE Lightning Arresters, also known as Active Lightning Arresters, provide an enhanced Radius of Protection, reducing the number of Lightning Arresters and down conductors needed for your building or solar project while still providing complete protection.

### Protection Radius of Axis Smart Lightning Arrester:

The protection radius of an ASLA is related to its height (h) relative to the surface to be protected, to its efficiency and to the selected protection level

$$R_p(h) = \sqrt{2rh - h^2 + \Delta(2r + \Delta)} \quad \text{for } h \geq 5m \quad R_p = h \times R_p(5) / 5 \quad \text{for } 2m \leq h \leq 5m$$

#### where

$R_p$  = Protection radius of ASLA at a given height h (m)

h = Height of ASLA tip over the area of reference plane considered

r = 20m for protection Level-I  
30m for protection Level-II  
45m for protection Level-III  
60M for protection Level-IV

$\Delta$  = Initiation advance equivalent to efficiency of ASLA as per below(m)

ASLA-15:  $\Delta=20$

ASLA-30:  $\Delta=30$

ASLA-60:  $\Delta=63$

### Protection Radius of ASLA ESE, $R_p$ (m)

Height of ASLA terminal over the protection area h(m)	2	3	4	5	8	10	15	20	45	60
<b>Protection Level 1</b>										
ASLA 15	15	22	30	37	38	39	40	40	31	-
ASLA 30	19	29	38	48	49	49	50	50	43	30
ASLA 60	31	47	63	79	79	79	80	80	76	69
<b>Protection Level 2</b>										
ASLA 15	17	26	35	43	45	46	48	49	48	40
ASLA 30	22	33	44	55	56	57	58	59	58	52
ASLA 60	35	52	69	86	87	88	89	89	89	85
<b>Protection Level 3</b>										
ASLA 15	20	31	41	51	53	55	58	60	65	63
ASLA 30	25	38	51	63	65	66	69	71	75	73
ASLA 60	39	58	78	97	98	99	101	102	105	104
<b>Protection Level 4</b>										
ASLA 15	23	35	46	58	61	62	66	69	79	80
ASLA 30	28	43	57	71	73	75	78	81	89	90
ASLA 60	43	64	85	107	108	109	111	113	119	120

**2025 Edition**

**Talk to Us**



AXIS ELECTRICAL COMPONENTS (I) P. LTD.

Registered Office: AXIS House, Plot No. 149 BCD  
Kandivali Co-op Industrial Estate Ltd., Kandivali (W),  
Mumbai – 400067, Maharashtra, India. Tel: +91-22-67756000  
email: sales@axis-india.com | Website: www.axis-india.com

