

Rp PROTECTION RADIUS (m)

PROTECTOR ESE CONDUCTORS

h = Conductor tip height (m)

2 4 5 7 10 15 20 45 60

LEVEL 1

Protector DP 25	17	34	42	43	44	45	45	45	45
Protector DP 40	26	50	58	59	59	60	60	60	60
Protector DP 60	32	66	79	79	79	80	80	80	80

LEVEL 2

Protector DP 25	23	45	57	59	61	63	65	70	70
Protector DP 40	32	60	76	77	78	80	82	85	85
Protector DP 60	40	78	97	98	100	101	103	105	105

LEVEL 3

Protector DP 25	26	54	65	66	70	72	75	84	85
Protector DP 40	36	71	84	86	87	90	94	99	100
Protector DP 60	44	88	107	108	110	111	114	119	120

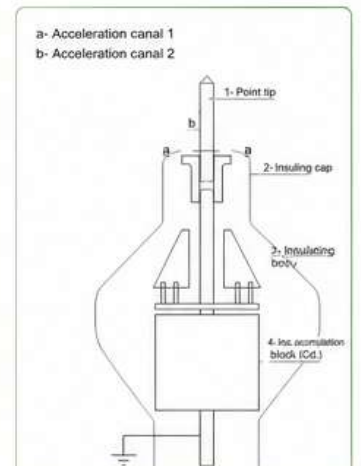


THE SPECIFICATIONS OF ACTIVE CONDUCTOR PROTECTOR

- The active conductor PROTECTOR is ESE (Early Streamer Emission) type.
- The active conductor PROTECTOR is certified by Middle East Technical University.
- The active conductor PROTECTOR supplies the energy from the electrostatic field intensity variations that is formed in the air. There is no need for an extra energy source like wind energy, solar energy or kinetic energy that is created by the vibrations. The inner structure does not consist of neither coils or condensers which could be flammable or explosive during the discharge nor the Piezo crystals that might be broken during the discharge or vibration.
- The active conductor PROTECTOR is made of special materials to prevent the system from chemical corrosion.
- The conductor has different protection levels and depending on these levels, has different protection areas. There is a separate ΔT trigger time advantage for each protection level.
- ΔT trigger time advantage is acceptable to the NF C 17-102 standards.
- The conductor have a protection mechanism the prevent the active system against the lightning discharge. As of this mechanism, there is no need for the connection elements, such as cables, etc.
- The active conductor PROTECTOR is designed as compact and small to maintain installation and transportation advantage.



DOCUMENTS AND CERTIFICATES



SAFE &
RELIABLE



HIGH
PERFORMANCE



ADVANCED
TECHNOLOGY

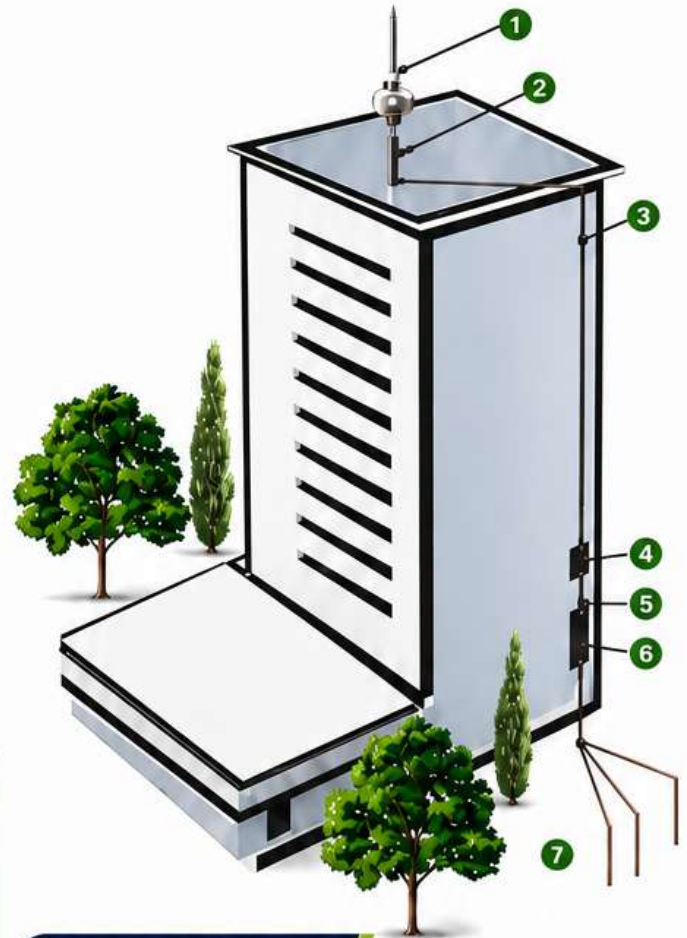


COMPLETE
PROTECTION

POWERING SAFETY. GROUNDING TRUST.

STANDARD INSTALLATION SCHEME

- 1 Protector ESE lightning conductor
- 2 Beam connection
- 3 Conductive connection
- 4 Protector lightning strike counter
- 5 Test joint
- 6 Protection guard
- 7 Earthing



PROTECTOR
HIGH TECHNOLOGY LIGHTNING PROTECTION SYSTEM

LIGHTNING COUNTER



Specifications:

Dimensions	: 173 x 82 x 44 mm
Weight	: 740 gr
Temperature range	: -20 to +50 °C
Counter	: 6 digits
Protection	: IP 65
Starting threshold	: 1 – 100 kA in 8/20 wave
Min. Time between 2 discharges	: 100 ms
Connection	: f8 – 30x2 – 30x3 available

WORKING PRINCIPLE

The Protector lightning counter is produced to count the lightning strike discharges that goes through the conductor down to the ground.

The counter is to be installed on the down conductor. It can whether be installed serial or parallel. The device consists of electrical parts.

No maintenance required. Do not try to unscrew or uninstall the equipment as this will cause damage and will break down the product guarantee conditions. The device is a high technology product and conforms the working and laboratory test conditions.

PROTECTOR
HIGH TECHNOLOGY LIGHTNING PROTECTION SYSTEM

PROTECTOR TEST DEVICE

Specifications:

Dimensions	: 107 x 148 x 44 mm
Weight	: 930 gr
Operation Frequency	: Standard
Power	: 9 V Battery

WORKING PRINCIPLE

The Protector tester is developed and presented to common use in order to maintain the highest security and make sure that the lightning conduction system works properly in the installed areas. The Protector tester enables you to control that the Protector conductor is in standard operation by making a connection both to the upper tip and the lower shaft. By using the Protector tester, the Protector lightning conductor is tested in addition to the ground resistivity tests and these two tests together creates a common and proper control on the system.



SAFE &
RELIABLE



HIGH
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COMPLETE
PROTECTION

LIGHTNING PROTECTION SYSTEM COMPONENTS



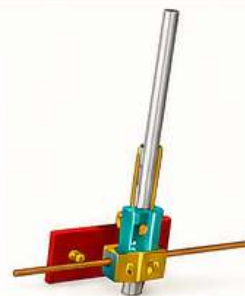
01

AIR TERMINATION ROD & ACCESSORIES

The length of ATR and No. of ATR to be selected in the lightning protection system. Material is AlMgSi. In Lightning protection system this is mounted vertically on the top most point of the structure.

GENERAL TECHNICAL DATA

Material of Air Termination Rod	AlMgSi
Standard	EN62561-2
ATR	1Mtr. / 2Mtr. / 3Mtr.
O.D.	16mm
Total Length	1 Mtr. / 2 Mtr. / 3 Mtr.
No. of Clamps	1 / 2
Max gust wind speed	186 Km./h



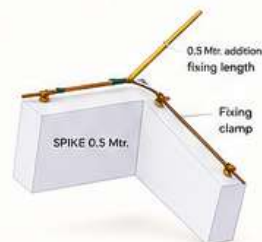
02

SPIKE

The length of Spike is 0.5 Mtr. And it has additional fixing length of 0.5 Mtr. It will be fitted at 0.4Mtr. apart at two points in fixing length.

GENERAL TECHNICAL DATA

Material of Spike	AlMgSi
Standard	EN62561-2
ATR	0.5Mtr.
O.D.	8mm
Total Length	0.5 Mtr.
No. of Clamps	2
Max gust wind speed	186 Km./h



03

SIDE WALL CLAMP

Side Wall Clamp is a vertical mounting bracket for Air Termination Rod. It maintains 50mm distance from mounted wall surface.

GENERAL TECHNICAL DATA

Material of Side Wall Clamp	SS
Standard	EN62561-1
Clamping range distance from wall	15 - 20 mm
Distance between 2 Fixing Screws	90mm



04

SELF SUPPORTING CONCRETE BASE

Concrete base provided to ATR is a self supporting base. This is used on flat roofs. This support to ATR, either as a single support or in multiples, as the case may be. The ATR will be fixed in the GI bush of Concrete Block with the glue.

GENERAL TECHNICAL DATA

Material of Concrete Base	Concrete C45/55
Weight	18 Kgs / 9 Kgs
Base Diameter	340mm / 240mm
Supporting Height	90mm
Compressive strength	28MPa



05

TRIPOD STAND

To support ATR vertically on Flat roofs, Tripod Stands are used. It is having a SS Tube to hold ATR. ATR is fixed by gluing in the tube. There are three resting points, equally distributed on a circle of 1 Mtr.Dia. It is a rigid support to ATR

GENERAL TECHNICAL DATA

Material of Tripod Frame	GI/SS
Standard	EN62561-1
Support	Dia. 16mm
Required space	Circle of ø1Mtr.
Wt.	20 Kgs.



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FIXTURE ON THE RIDGE OF SLOPING METALLIC ROOF

Frame of GI Strip of size 25X6 mm, is fabricated keeping a moderate clearance over the ridge of sloping metallic roof. A base plate is fastened over the Frame. A GI bush is welded to Base Plate, so that the ATR can be mounted on it vertically. The length of Bush depends upon the length of ATR. The ATR is fixed by gluing in the Bush or can be fastened with 2 Nos of M8 Screws.

GENERAL TECHNICAL DATA

Material of Fixture	GI
Standard	EN62561-1
GI Strip for Frame	25X6mm
Restig Length on either side	0.5 Mtr.each side
No. of fastening on either side	2Nos on each side
Max Gust Wind Speed	186 Km./h



07

PARALLEL CONNECTOR

The Parallel connector is mainly used to connect two ends of parallel laid conductors. In the same way it can also be used to clamp Spike rods.

GENERAL TECHNICAL DATA

Material of Parallel Connector	SS
Standard	EN62561-1
Material Sheet Thickness	2.8mm
Clamping Range round	ø8 - ø10mm
No. of Screws	1
Size of Screw	M8-20L



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PLASTIC ROOF CONDUCTOR HOLDER WITH ROUND BASE

Plastic Roof Conductor Holder with round base is used in LPS system to hold conductors of size ranging from $\phi 8$ to $\phi 10$ mm. It is used to hold horizontal & vertical conductors.

GENERAL TECHNICAL DATA

Material	Plastic
Standard	EN62561-2
Base Size of RCH	$\phi 65$ mm
Height of Conductor	37mm
Holding Range	$\phi 8$ to $\phi 10$ mm



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PLASTIC ROOF CONDUCTOR HOLDER WITHOUT ROUND BASE

Plastic Roof Conductor Holder without round base is used in LPS system to hold conductors of size ranging from $\phi 8$ to $\phi 10$ mm. It is used to hold horizontal & vertical conductors.

GENERAL TECHNICAL DATA

Material	Plastic
Standard	EN62561-2
Height of Conductor	37mm
Holding Range	$\phi 8$ to $\phi 10$ mm



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1 KG CONCRETE ROOF CONDUCTOR HOLDER – SNAP TYPE

Concrete Roof Conductor Holders are used in LPS system to hold conductors on Flat roof only. The holding range is from $\phi 8$ to $\phi 10$ mm. It is used to hold horizontal conductors.

GENERAL TECHNICAL DATA

Material	Concrete RCH
Holding Material	Plastic
Holding Range	$\phi 8$ to $\phi 10$ mm
Height of Conductor	70mm



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1 KG CONCRETE ROOF CONDUCTOR HOLDER – CLEAT TYPE

Concrete Roof Conductor Holders are used in LPS system to hold conductors on Flat roof only, by fixing with cleat. The holding range is from $\phi 8$ to $\phi 10$ mm. It is used to hold horizontal conductors.

GENERAL TECHNICAL DATA

Material	Concrete RCH
Holding Material	Plastic
Holding Range	$\phi 8$ to $\phi 10$ mm
Height of Conductor	60mm



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STANDING SEAM WITH CLEAT

Standing Seam with Cleat is used in LPS system on sloping metallic roof where this can be clamped to one of the elements on or near the roof sheet. The roof conductor will be held in Cleat.

GENERAL TECHNICAL DATA

Material	SS / GI
Standard	EN62561-2
Clearance below Conductor	70 mm
Holding range	$\phi 8$ - $\phi 10$ mm



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STANDING SEAM WITH CROSS CONNECTOR

Standing Seam with Cross Connector is used in LPS system on sloping metallic roof where this can be clamped to one of the elements on or near the roof sheet. The roof conductor as well as Down Conductor will be held in Cross Connector.

GENERAL TECHNICAL DATA

Material	SS / GI
Standard	EN62561-1
Clearance below Conductor	70 mm
Holding Range	$\phi 8$ to $\phi 10$ mm



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STANDING SEAM ON VERTICAL ROOF JOINT

Standing Seam on Vertical Roof Joints is used in LPS system on sloping metallic roof where this can get clamped to the roof sheet vertical joint. With a set of 2 or 4 Nos ATR Base Plate can be mounted on it. It can also be used as a single clamp with cleat to hold roof conductors

GENERAL TECHNICAL DATA

Material	SS / GI
Standard	EN62561-1
Clearance below Conductor	70 mm
Holding Range	$\phi 8$ to $\phi 10$ mm



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GIRDER CLAMP – HORIZONTAL FLANGE WITH CLAMPING SHOE

This combination is used in LPS system on sloping metallic roof where this can be clamped to Girder and the roof conductor will be held in Shoe clamp.

GENERAL TECHNICAL DATA

Material	GI
Standard	EN62561-2
out side Size	30 X 25 X 75 mm
Holding range	3 - 18 mm



LPS COMPONENTS



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GIRDER CLAMP – VERTICAL FLANGE WITH CLAMPING SHOE

This combination is used in LPS system on sloping metallic roof where this can be clamped to Girder and the roof conductor will be held in Shoe clamp.

GENERAL TECHNICAL DATA

Material	GI
Standard	EN62561-2
out side Size	30 X 25 X 75 mm
Holding range	3 - 18 mm



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SPLICER / STRAIGHT CONNECTOR

Splicer / Straight Connector is used in LPS system to connect and clamp two ends of Conductors which are laid in a line. Holding range is from ø8 to ø10mm.

GENERAL TECHNICAL DATA

Material	Al
Standard	EN62561-1
Holding Range	ø8 to ø10mm



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EXTENSION PIECE

Extension Piece is used in LPS system to accommodate expansion/ Contraction of conductors, on roof, depending upon the seasons. It is fitted in conductors on roof after every 20 Mtrs. with Splicer / straight connectors

GENERAL TECHNICAL DATA

Material	Al (AlMgSi)
Standard	EN62561-2
Size	ø8 X 395mm L



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FIXED EARTH TERMINAL

Fixed Earth Terminals are used in LPS system to enable to connect, concealed conductor either in Columns or in walls with the conductors which are laid on the surface of columns and walls.

GENERAL TECHNICAL DATA

Material	SS
Connecting Thread Size	M10 / M12
Connection Round Plate	ø80mm



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STRIKE PAD WITH STUD

Strike Pads, in LPS system, are used to arrest Flash currents if any exist, above 60 Mtrs. Of Structure. And its Stud connects the flash current to down conductors. They are mounted on a conductor ring laid around outer surface of the structure.

GENERAL TECHNICAL DATA

Material	Al
Standard	EN62561-1
Size	Base ø80 X 35 ht
Fixing provision	M8 Tapped Hole



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U-CLAMP WITH CLEAT

In Lightning protection system, when the conductors are coealed in columns, U-Clamps will be clamped to reinforcement bars and the conductor will be held in its cleat. Similar application can also be done on Metallic roof.

GENERAL TECHNICAL DATA

Material	SS / GI
Standard	EN62561-1
Clamping & Holding Range	ø32 MM / ø8mm



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MV CLAMP

To Clamp and connect two conductors in parallel or across, Vertically or Horizontally, this clamp is used in LPS System.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø8 to ø10mm
Hex Head / Truss Head Screw	M8 - 25L



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SADDLE CLAMP WITH PAD

This is used in LPS system to hold conductors of cable with PVC Sleeve.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø10 - 13 mm



LPS COMPONENTS



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SHOE CLAMP

Shoe Clamps are used in LPS system to hold conductors at various locations.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø10mm
Size	25x30 mm



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EPOXY INSULATING HOLDER

These are used in LPS system to hold Flat Conductors Vertically / Horizontally.

GENERAL TECHNICAL DATA

Material	Red Epoxy
Clamping Screws	2 X M8-12 L
Flat Size to Accommodate	25X3 / 25X6
Dist. from surface	10mm



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CROSS CONNECTOR ROUND TO FLAT

To Clamp and connect two conductors round & Flat across, this clamp is being used.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø8-ø10mm / 30mm
Screw Size	4XHex Hd M8 Sc.



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CROSS CONNECTOR ROUND TO ROUND

To Clamp and connect two conductors round & round across, this clamp is being used.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø8-ø10mm
Screw Size	4XHex Hd M8 Sc.



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CROSS CONNECTOR FLAT TO FLAT

To Clamp and connect two conductors Flat & Flat across, this clamp is being used.

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	30 / 30 mm
Screw Size	4XHex Hd M8 Sc.



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DISCONNECTING CLAMP ROUND TO FLAT

This is used to connect/disconnect down conductors with the link leading to earth grid ring

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø10mm / 30mm



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DISCONNECTING CLAMP ROUND TO ROUND

This is used to connect/disconnect down conductors with the link leading to earth grid ring

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	ø8 - ø10mm



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TEST CLAMP / DISCONNECTING CLAMP FLAT TO FLAT

This is used to connect/disconnect down conductors with the link leading to earth grid ring

GENERAL TECHNICAL DATA

Material	SS
Standard	EN62561-1
Holding Range	30mm



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LIGHTNING STRIKE COUNTER

This is used to count the impulse current occurred between equipotential bonding busbar and earths termination system.

GENERAL TECHNICAL DATA

Material	Plastic Body
Digits displayed in counter	6 Digits
Size of Counter	45X60X55Ht.

