



CATALOGUE

*External Lightning Protection
Products : Widely in Use*



TCT

Lightning Protection Inc.

2019 Edition



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How We Manufacture ?

We have educated people to manufacture. We conduct our experience and our enthusiasm to our products.. (President)

TCT Protection Inc.offers range of products are in steel, stainless steel, aluminium, copper, brass, bronze, cast iron, plastic, and concrete. Coatings of the products above are galvanize, tin, copper and chrome nickel.

Steel products are manufactured from steel A283C (US) / S235 (EU). All nuts are from hot deep galvanized.M6-M10. Hot dip galvanized

Plastic products with UV stabilization.

Cooper products are manufactured from E-Cu. All nuts are from stainless steel.M6-M10.

Stainless steel products are manufactured from – Inox stainless steel DIN 1.4301 (AISI 304) All nuts are from stainless steel M6, M8, M10.

Aluminium alloy products are manufactured from – AlMgSi EN AW 6101B. Fasteners M8 and M10 including spring washer are made from stainless steel in quality A2.

TCT Protection Inc. provides for its own products certification in Electrotechnical testing facilities inside of our factory and in 3rd parties. On the base of testing protocols are issued certificates for each category of products.



TCT Protection Inc. is a Canada based international company having its manufacturing facilities with a broad range of products for lightning protection and grounding systems in accordance with the international standards, such as UL, NFC, UNE, etc.

We manufacture our products to the highest standards, and our facilities have the relevant and up to date instruments to meet our customers' technical requirements. We are rewarded as one of the most preferable and reliable companies in many international projects by virtue of our profound experience and versatile engineering solutions.

Our goal is to meet the highest quality with sufficient, reliable and affordable products on par with our customers' needs.

Some of our product groups are:

- Lightning Rods
- Special Downconductor
- Aviation Lamps
- Exothermic connection
- Mechanical Connection Clamps
- Ground rods and additives
- Grounding Connection Clamps

TCT Protection Family

What is lightning?

Lightning is a large electrical discharge caused by a thundercloud. It can occur within a cloud as intracloud lightning, between clouds as intercloud lightning, or between the cloud and the earth as cloud-to-ground lightning. A lightning discharge consists of pulses of electric current carried by electrons. The current is driven by a high voltage between the cloud's charge centres or between them and the earth.

When enough charge is accumulated, the air breaks down electrically and narrow, hot, highly ionised channels are formed where the movement of electrons neutralises the accumulated charges. Once a pathway is completed a spark forms. Ionisation means that electrons are removed from air molecules which thus remain positive, and the insulating air becomes electrically conductive.

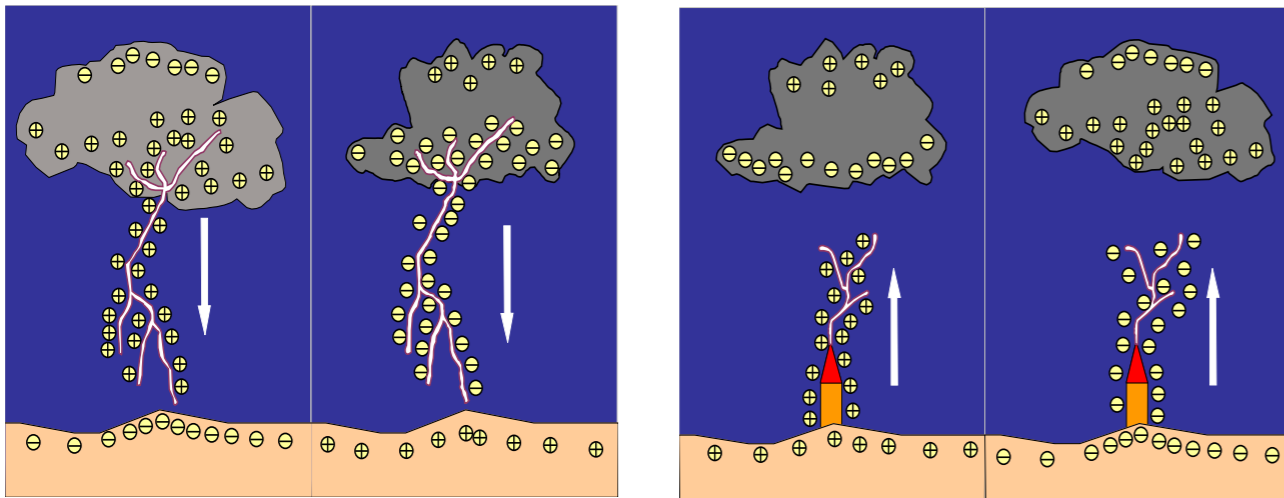


Figure 1a Positive downward flash Figure 1b Negative downward flash

Figure 2a Positive upward flash Figure 2b Negative upward flash

Lightning facts

- At any time there are over 2,000 thunderstorms occurring worldwide, each producing over a 100 lightning strikes a second.
- That's over 8 million lightning bolts every day.
- A lightning strike discharges about 1-10 billion joules of energy and produces a current of 30,000 – 50,000 amps.
- A single lightning bolt unleashes as much energy as blowing up a ton of TNT.

Active Lightning Protection



Conventional Lightning Protection



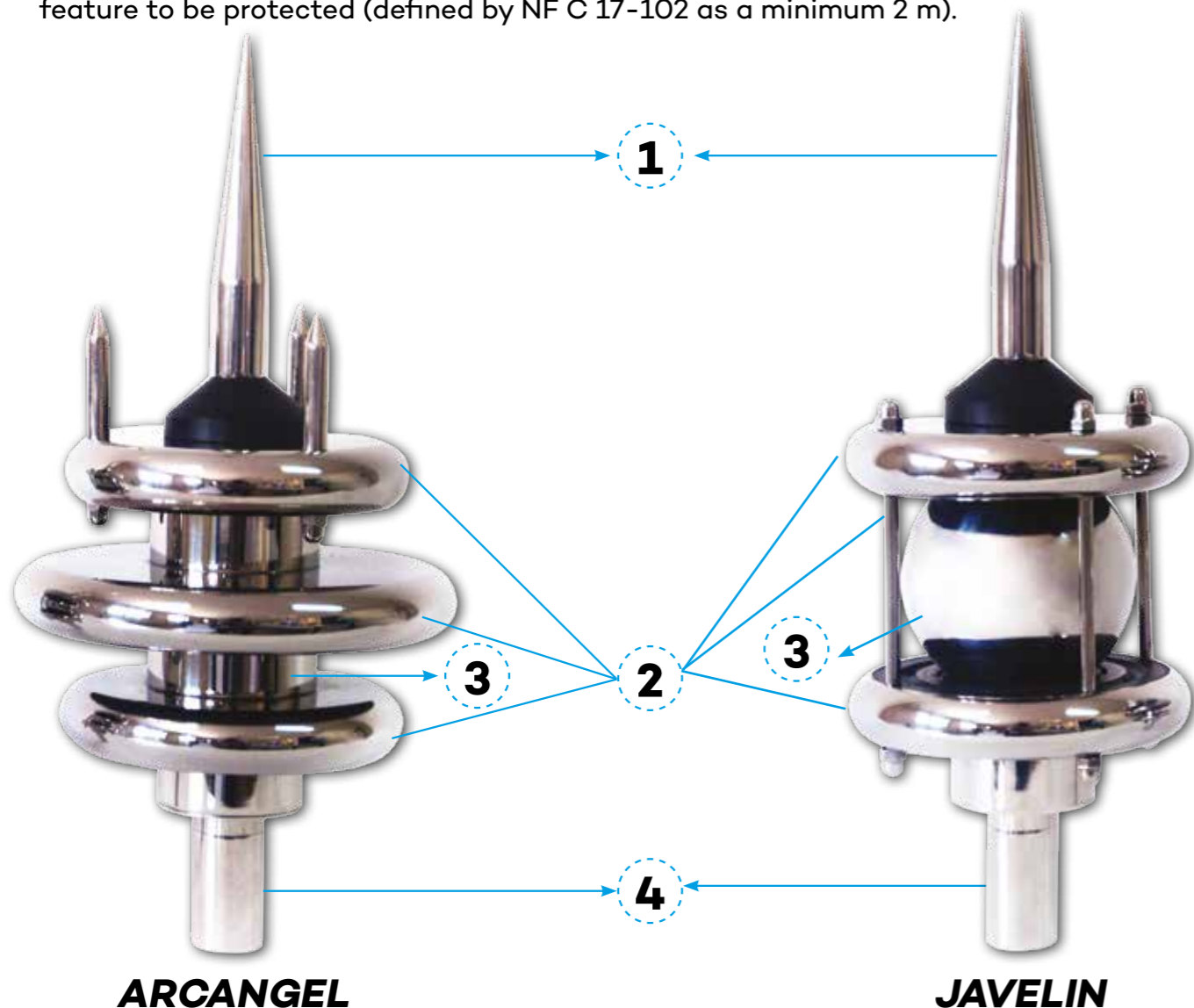
Lightning Rods

Active Lightning Protection Rods

Javelin and Arcangel

According to NF C 17-102:2011, the standard protection radius (Rp) of the Javelin and ARCANGEL is linked to ΔT (below), the protection levels I, II, III or IV (as calculated in EN 62305-2) and the height (h) of the Javelin and ARCANGEL above the structure or feature to be protected (defined by NF C 17-102 as a minimum 2 m).

Active Lightning Protection



- 1 Air Terminal
- 2 Atmospheric Electrodes
- 3 Ion Generator (Inside of the body)
- 4 Ground Connection terminal

Materials:

- All Metal parts: Stainless steel
- Compact Device: Ion Generator
- Insulation parts: Cast Poliamid

Simple Lightning Rods Conventional Lightning Protection

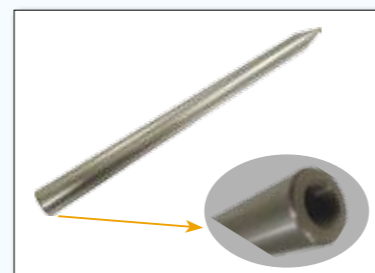


Lightning Rod "Mushroom Shaped"

Code	Explanation
TCT.501	• Available in Copper, Aluminium, Stainless Steel,

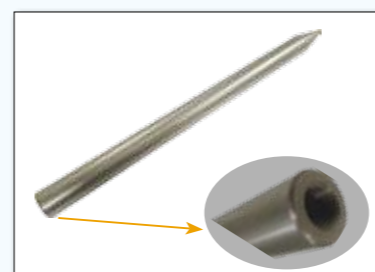


Code	Explanation
TCT.616	• Available in Bronze • Available in sizes 16 to 20mm diameters



Lightning Rod

Code	Explanation
TCT.416	• Available in Bronze, • Available in sizes 16 to 20mm diameters • Available in length 1000 to 3000 mm • Copper, Aluminium, Stainless Steel,



Lightning Rod Long

Code	Explanation
TCT.420	• Available in Bronze, • Available in sizes 16 to 20mm diameters • Available in length 1000 to 3000 mm • Copper, Aluminium, Stainless Steel,

Adaptors

Adaptors are in use for mounting two pieces of external lightning protection system. They can be designed according to dynamic - static load, metal corrosion or wind force etc.

- Adaptors connect the lightning rod to remaining external lightning protection system.
- All products in these sheets can be produced in different metal castings or in different diameters
- Available in Copper, coated copper, Aluminium, Stainless Steel, bronze, plastic.
- Available in sizes 16 to 30mm diameters / 2", to 3"



Pipe Adapter

Code	Dia.	Material
TCT.PL01	16-30mm / 2" - 3"	Aluminium, Steel, Stainless Steel, Copper



Coupling Adapter

Code	Dia.	Material
TCT.V01	16-28mm / 2" - 3"	Aluminium, Steel, Stainless Steel, Copper



Clamping Adapter

Code	Dia.	Material
TCT.YV01	16-28mm / 2" - 3"	Aluminium, Steel, Stainless Steel, Copper



Insulated Adapter

Code	Dia.	Material
TCT.PA01	16-28mm / 2" - 3"	Plastic

Lightning Rod Holder



Cube

Code	Material
TCT.103	Copper, brass, tinned copper 50mm ² to 95 mm ² AWG (1 - 3/0)



Single Screw

Code	Material
TCT.103	Steel electro galvanized hot galvanized stainless steel 50mm ² to 95 mm ²



Base for Plus&Block Type Lightning Rod Holder

Code	Material
TCT.105	Steel electro galvanized hot galvanized



Plastic Rod Holder

Code	Material
TCT.201	Plastic



Screw Type

Code	Material
TCT.102	Available in Stainless Steel or galvanized steel. 50mm ² to 120 mm ² AWG (1 - 3/0)



Mast Hat

Code	Material / Coating	Mast Diameter (inch)
TCT.108	Available in Stainless Steel or galvanized steel.	2"-3"



Lightning Rod Holder for Mast Coupling

Code	Material / Coating	Mast Diameter (inch)
TCT.108.01	Available in Stainless Steel or galvanized steel.	2"-3"



Mast Adapter

Code	Dia.	Material
TCT.2P.01	16-28mm	Aluminium, Steel, Stainless Steel, Copper



Frech Type Adapter

Code	Dia.	Material
TCT.FTA.01	16-28mm / 2" - 2½ and 3"	Aluminium, Steel, Stainless Steel, Copper



Frech Type Europe Adapter

Code	Dia.	Material
TCT.2P.01	16-28mm	Aluminium, Steel, Stainless Steel, Copper

Lightning Rod Holder For Flat Surfaces



- All products in these sheets can be produced in different metal castings or in different diameters. Available in Copper, Aluminium, Stainless Steel, Bronze
- Available in sizes 50mm² to 95mm² diameters / 20x3 - 30x5
- AWG (1 - 3/0)

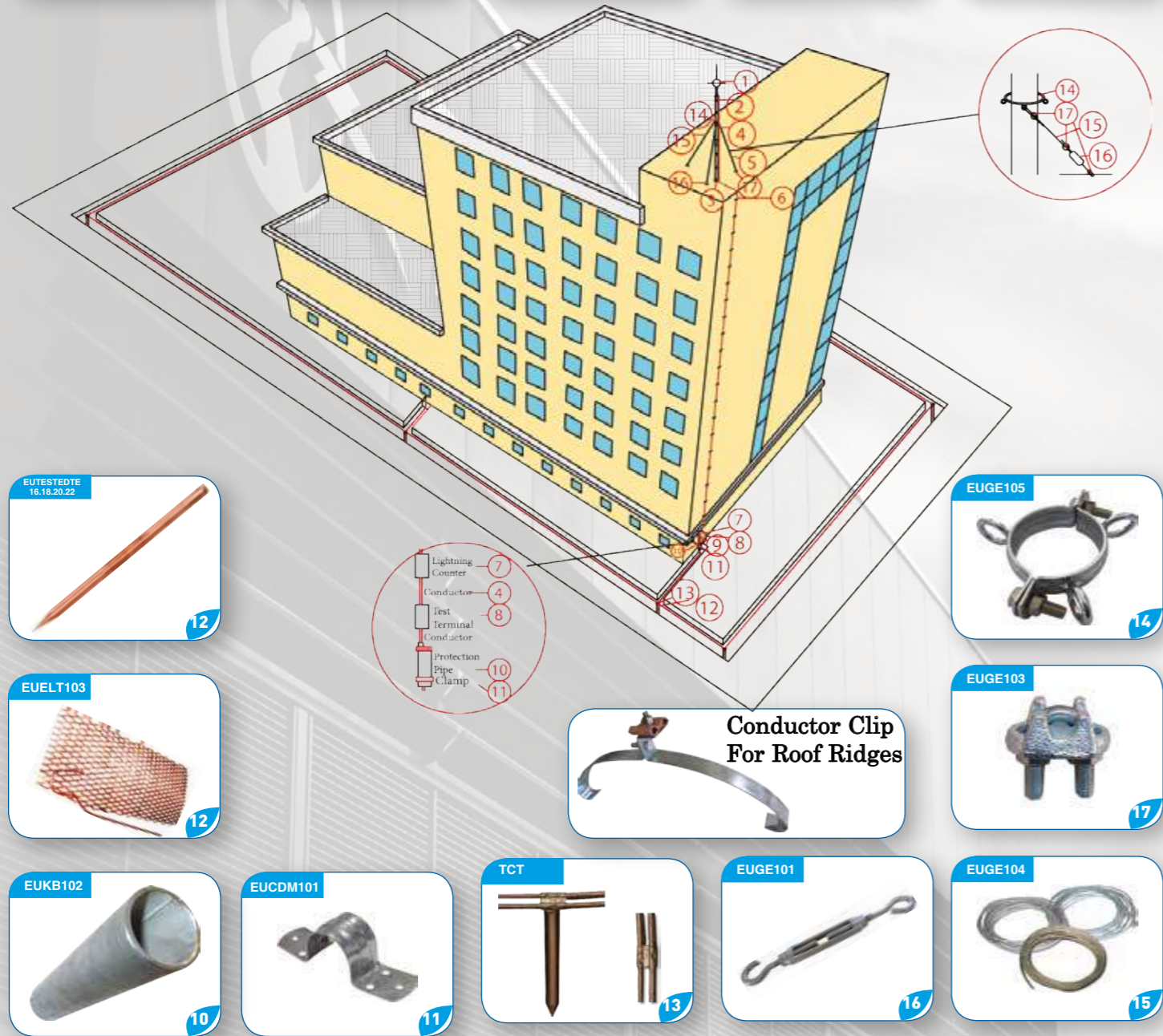
Lightning Rod Holder "Slope Adjustable"



Lightning Rod Holder For Walls and Chimneys



A TYPICAL ESE APPLICATION



Roof Mounting Products Lightning Rod Roof Systems

- All products in these sheets can be produced in different diameters. Available in Copper Aluminium, Stainless Steel
- Available in sizes 2x50mm² to 2x95mm² diameters / 20x3, 30x3, and 40x3
- AWG (1 - 3/0)

Lightning Rod Holder For Clamp Roofs



Figure 9 Application example of lightning protection and grounding at a building

Mast insertion and fastening parts

- All standarts and regulations recommend to set up lightning protection system minimum 2 mt over the structure. TCT Protection supply almost all available masts.
- AWG (1 - 3/0)



Code Available in Aluminium, Stainless Steel,
TCT.101 Available in sizes 2", to 3"



Fixings for lightning rod conductors and elevation rods

Code	Type	Dimensions mm	Part for caulking mm	Concrete cube mm	Weight kg
TCT 2001 MR	Galvanized steel	750	250	250	180



Mast Holder For Flat Surfaces

Code Available in or galvanized steel
TCT.201 Available in sizes 2", to 3"



Corner Type

Code Available in or galvanized steel
TCT.301 Available in sizes 2", to 3"

Masts

TCT Protection have some lightning rod masts; according to type of lightning protection system and its details.

- AWG (1 - 3/0)



Three-foot saddle

Code	Height m	Drilling Ø mm	Distance between feet mm	Weight kg
TCT 3200 FS	800	10	385	6.00

- Available in Stainless Steel or galvanized steel.



Portable Mast

Code	Lenght (m)	Material
TCT.106.01	3 to 14 mt	Available in Stainless Steel or galvanized steel.



Polygon Mast

Code	Height	Material
TCT.10	10-25	Available in Stainless Steel or galvanized steel.



Telescopic Mast, Aluminium

Code	Height		Definition	Weight (kg)
	Open	Closed		
TCT.002.01	6-17 m	4-7	<ul style="list-style-type: none"> • Movement with Manpower. (Hand made) • Can be fixed to the desired height. 	40-100kg

Mast Conductive Transtition

After catch the lightning, it is transtered to the grounding system via conductors, the transmission starts with mast clamps. It could be suitable for tape or round conductors. Mast clamps can be made of steel, stainless steel, copper, galvanized steel, clad metal, forged or cast metals.

Sometimes there is not enough clear space for install your system. Vertical type mast holders are one of the finest product to use in these cases.

- AWG (1 - 3/0)



Mast Holder For Walls (Vertical)

Code	Material / Coating	Pipe Dia. (inch)
TCT.401.05	Available in Stainless Steel or galvanized steel.	2"-3"



Mast Clamp For Wall (Vertical)

Code	Material / Coating	Pipe Dia. (inch)
TCT.101.05	Available in Stainless Steel or galvanized steel.	2"-3"



Mast Holder, Rotatable

Code	Material / Coating	Pipe Dia. (inch)
TCT.402.05	Available in Stainless Steel or galvanized steel.	2"-3"



Adjustable U Bolt

Code	Material / Coating	Pipe Dia. (inch)
TCT.100.00	Available in Stainless Steel or galvanized steel.	1/2" ↔ 3"



U Bolt With Bar

Code	Material / Coating	Pipe Dia. (inch)
TCT.300.00	Available in Stainless Steel or galvanized steel.	1/2" - 3"



Stamp For Double Conductors

Code	Dia.	Material
TCT.2P.01	16-28mm	Aluminium, Steel, Stainless Steel, Copper

Mast conductive transition

Conductor Holder for Mast



Code	Material / Coating	Dia.	Cross Section
TCT.122.20.04	Available in Stainless Steel or galvanized steel.	2"-3"	1x50mm ² - 1x95mm ²
			2x50mm ² - 2x95mm ²
			20x3-25x5mm-40x3-40x5mm

Mast Clamp



Code	Material / Coating	Dia.
TCT.130.01	Available in Stainless Steel or galvanized steel.	30x3

Multi Purpose Clamps

- All products in these sheets can be produced in different diameters. Available in Copper, Aluminium, Stainless Steel
- Available in sizes 2x50mm² to 2x95mm² diameters / 20x3, 30x3, and 40x3
- AWG (1 - 3/0)



TCT.113.04



TCT.113.24



TCT.113.31



TCT.120.04



TCT.120.24



TCT.120.31

Counter

Code
ACB

This device monitors the number of lightning flashes that hit the lightning rod. It is mounted on to the down conductor of the conventional or ESE System. Packing 0,75kg. 70x11,50x230mm. AWG (1 - 3/0)



Test Clamp



TCT.201.24



TCT.105.04



TCT.104.04

- All products can be produced in different diameters. Available in copper, Aluminium, Stainless Steel, Bronze, Plastic, Coated Copper.
- Available in sizes 1x50 - 2x95, 30x5 - 25x5mm
- AWG (1 - 3/0)

Protective Tube for Conductor



Protective channel

Code	Material/Coating	Type	Dimensions mm	Weight kg
TCT.4200 FP	Protective tube for flat conductor	galvanized steel	40 x 4 x 2000	1
TCT.4201 FP	Protective tube for flat conductor	galvanized steel	40 x 4 x 2000	1.8



Protective Pipe for Conductor

Code	Material/Coating	Pipe Dia (inch)	Pipe Length
TCT.102.01	Available in Stainless Steel or galvanized steel.	1/2" - 1 1/2"	3 m



Clamp For Protective Tube

Code	Material/Coating	Pipe Dia (inch)
TCT.11.05	Available in Stainless Steel or galvanized steel.	2" - 2 1/2" - 3"

Aviation Lamps

Single Warning Lamp RWL.01



Lower Part Aluminium

Double Warning Lamp RWL.02



MAIN CODE	PL (Power Led) No, W	OPERATION VOLTAGE (V)	VOLTAGE TYPE AC/DC	LOWER PART	UPPER PART	MONITORING
RWL.01 SINGLE	3L: PL 3x1 W. 6L: PL 2.(3X1W)	012, 024, 048 12-36: A036 48 - 250: A250	dc: Direct Current	A: Aluminium	cg: Clear Glass rg: Red Glass cp: Clear ABS	NO MONITORING :0 LED FAULT: 2 LED&POWER FAULT:3
RWL.02 DOUBLE	3L		ac: Alternative Current	P: Plastic		

2 IN 1 THERE ARE 2 PCS.WARNING UNITE IN 1 ARMATURE. ONE OF THEM IS SPARE



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