



# CMCE MARINE LIGHTNING PROTECTOR

B R O C H U R E



**PARAGUAY**

[www.sertecmarine.com](http://www.sertecmarine.com)

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# SERTEC S.R.L.

Sertec S.R.L. It is an Engineering company, with an experience and a good national and international reputation of 20 years; being one of the main product lines of the company the multiple Compensators of Electric Charge "CMCE SERTEC" designed against atmospheric discharges.

Throughout the development of its technology, it has installed thousands of devices against atmospheric discharges worldwide in different types of applications on land and sea, including industries with explosive, chemical or highly dangerous atmospheres without ever having received lightning strikes and proudly fulfilling the mission of protecting the assets of its clients.

SERTEC S.R.L. has an important distribution structure in more than 50 countries around the world including: USA, Canada, United Kingdom, Germany, Norway, Italy, Holland, India, United Arab Emirates, Oman, South Africa, Zimbabwe, Singapore, Taiwan, Vietnam, Thailand, Mexico, Argentina, Ecuador, Peru, Bolivia, Honduras, Colombia, Costa Rica, Panama, Dominican Republic, Guatemala, Paraguay among others.

One of the important milestones is having reached at the beginning of 2020 the development of a specialized line of products for marine protection, designed to meet the demanding requirements of this industry and thus protect from small sailboats, luxury yachts, catamarans to transatlantic vessels of great bearing.



# SCENARIO

The CMCE Marine Lightning Protector was developed to solve the problem of electrical discharges on the high seas and in port suffered by vessels.



“More than 75 percent of the lightning claims were for less than 30 percent of the insured value of the boat. And nearly all of those claims were for electronics damages”

“I have seen a small sailboat moored between two larger ones being struck by lightning and sometimes a motor boat in the middle of a marina full of sailboats being struck. If lightning wants your boat, there's not much you can do about it. "(Boat US catastrophe member - Dewey Ives, a surveyor in Florida)”

“At first glance it seems unlikely, but the mast of a 35- to 45-foot sailboat would almost triple the chances of the vessel being hit.”



“According to Martin Uman of the Lightning Research Group at the University of Florida, the average lightning bolt is one inch wide and five miles long. (source: University of Florida Gainesville)”



“Lightning doesn't hit the ocean as much as land, but when they do, they spread out over the water as a conductor. It can hit nearby boats and shock fish near the surface. (Ocean Today-NOAA)”



# CMCE MARINE

Sertec has developed the highest technology solution in lightning protection for boats, compatible with navigation systems, hybrid engines, zero emission solar panels, carbon, aluminum, fiberglass hulls, rotating masts and all types of vessels.

The CMCE SERTEC MARINE is designed to protect against the electro-atmospheric effects produced by climate change, to compensate and stabilize the electrical charges in its environment and in movement on the high seas.

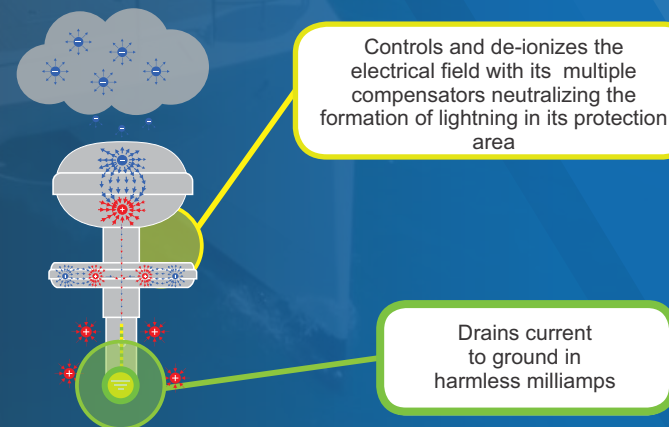
## Remote monitoring

Real-time monitoring of the CMCE-SERTEC. The information (miliamps readings) can be viewed from a web page Data can be obtained from all installed CMCE-SERTEC equipment, no matter the quantity.

- Historical data, that can be saved for reporting.
- Live status of the CMCE, on display.
- Alarms providing notification if there is an error.

## The technology is based on a principle of Nikola Tesla

In 1916 Nikola Tesla in his patent No. 1,266,175 mentioned the principles of operation of a primitive device based on the principles that underpin our developments, explaining the Since then, inconveniences produced by the top-of-the-line lightning rods, which, instead of protecting property and people, attracted lightning, increased the feasibility of lightning strikes and consequently the risks for them. New materials and designs, added to years of experience, have allowed us to improve the experiences of the undisputed scientist Nikola Tesla evolving in the protection of atmospheric phenomena.





# SITUATION

In a typical situation, any vessel on the high seas makes a perfect target when navigating near or in a thunderstorm, as it becomes the point of greatest attraction on the horizon of the storm.

The masts are not designed to contain and handle the discharges without collateral damage (the voltage that represents the discharge of more than 300,000V or 30,000A going through said structure). The aluminum or carbon fiber masts suffer micro fractures and the wooden ones can catch fire.

Fiberglass hulls suffer the same effect and lose their original rigidity due to microfractures, while aluminum or steel hulls become current conducting elements, impacting everything that is linked to them.

With a CMCE device installed at the highest point of a boat, the attraction effect caused by the masts and antennas is eliminated, creating a protection shield for the structures. It is important to mention that CMCE technology does not interfere or affect the efficiency of telecommunications systems.

CMCE Technology is a preventative element rather than protective gear, guaranteeing more sailing time instead of time and money lost on repairs.

Thanks to this technology, crew and passengers will be able to enjoy the sailing experience without worrying about being hit by lightning strikes.



# MODELS



## CMCE SERTEC MARINE

### GOLD

**Description:** Thanks to its small size and weight, it is also special for use in Small Boats, Sailboats, Marine Buoys, etc.

**Weight:** 1,062 kgrs. (Gross)

**Measurements:** Ø 12.5 cm x 21.6 cm.

**Packaging:**

Galvanized Metallic Material.



## CMCE SERTEC MARINE

### PLATINUM

**Description:** Of greater deionizing power, For use in medium-sized fishing or expedition boats, Catamarans, Small yachts, etc.

**Weight:** 2,750 kgrs. (Gross)

**Measurements:** Ø 16.25cm x 25.67cm

**Packaging:**

Galvanized Metallic Material.



## CMCE SERTEC MARINE

### DIAMOND

**Description:** With great deionizing power, it is developed for maximum protection in Yachts, Cruises, Cargo ships, Military ships, etc.

**Weight:** 6,170 kgrs. (Gross)

**Measurements:** Ø 25cm x 37.8cm

**Packaging:**

Galvanized Metallic Material.



# CERTIFICATIONS



Certification ISO 9001, ISO 14001 2015 by STARREGISTER



ILAC-MRA, ENAC



Approved by the NATO Cataloging System (NOC) with the NCAGE code SFKU3



Approved by the TESLA institute based on the IEC 60060-1, IEC 60060-2 Standard



Type Approval certificate ELE281223XC



We have UL Certification in a specific model.



CE marking on all CMCE models.



UKCA marking on all CMCE models





## PARTNERS



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*Soluciones inteligentes pensando en usted*