



# MoorMaster<sup>®</sup> Automated Mooring & ShorePower charging for e-vessels

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**Cavotec is a leading cleantech company that designs and delivers connection and electrification solutions to enable the decarbonization of ports and industrial applications.**

In the global ports sector, Cavotec is a leading innovator of automation and electrification systems. In close co-operation with customers, Cavotec has led the development of innovative solutions for e-vessels since 2014 and our solutions are in use or will soon be in use at over 60 sites.

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**Mooring and charging in a single system**

Cavotec's combined MoorMaster® automated mooring technology and Automatic Plug-in System (APS) is a single revolutionary platform that enables the fast, safe and efficient mooring and charging of e-vessels.

Combining MoorMaster® and APS into a single system ensures seamless vessel mooring and charging, and offers operators the best of both technologies:

- Superior integration maximises **safety** benefits, **charging time**, **reliability**
- Integrated **user interface** and **communication architecture**
- Unique mooring and charging **capabilities combined**

Cavotec supplied combined mooring and charging to the world's first electric ferry in 2015 and today the combined system is in operation at a growing number of Ro/Ro passenger applications across the Nordic region.

**How it works**

As a vessel approaches the berth, MoorMaster® is operated and activated using a remote control panel from the vessel. Once the ship is securely moored, the mooring system automatically signals to the APS unit and a sensor then guides a connector socket onboard the vessel to connect the ship's battery to electrical power to start charging – all within seconds of arrival at the berth.

When boarding and the charging sequence is complete, the charging socket disconnects, the MoorMaster® system releases the vessel allowing it to leave the berth. Again, all within seconds.



### **MoorMaster® automated mooring**

Introduced in 1999, MoorMaster® automated vacuum mooring is currently the only proven and widely used automated mooring technology on the market. The technology has performed close to 1,000,000 mooring operations at bulk, ferry, container handling and offshore applications worldwide.

The system moors vessels in seconds and holds ships stable in pre-determined positions. In ferry applications, this enables thrusters to be shut off early – thereby dramatically reducing energy consumption – and ensuring safe charging of vessel batteries.

#### **Key benefits:**

- Vessels moored in **less than 30 seconds**
- **Safe and efficient charging** due to reduced vessel motion
- **Reduced energy consumption**
- **Improved safety** with no personnel required on the quayside
- Potential **reduction in size of battery units**
- Vessel overhang possible, resulting in **reduced infrastructure costs**

### **Automatic Plug-in System (APS)**

Since the first installation in 2015, our APS for e-vessels maximises the amount of time ship batteries are charged, enabling fast turn-around times and improved operational efficiency. APS is also used to automate the connection of cranes, ships and industrial equipment to electrical power.

APS ensures fast and safe connection to and disconnection from electrical power for e-vessels, maximising charging capacity during loading and unloading and making it ideal for e-ferry applications.

Cavotec's latest generation of APS (Power**Adapt**, Power**Ramp**) is compact on-shore and on-ship, allows front and side charging, and is highly reliable. The upgraded system was introduced in 2020 and will soon be installed at more than 20 sites.

#### **Key benefits:**

- **Maximised charging times**
- **Safe operations** due to automated connection and electrical interlocks
- **Limited infrastructure costs**
- **Minimum modifications required** to vessels and berths
- **Robust design** reduces maintenance costs



# Have Cavotec contact you!

To discuss your specific requirements  
for making your operations safer, more  
efficient and more sustainable.

Simply book a call at  
[www.cavotec.com/contact-us](http://www.cavotec.com/contact-us)



**Do you want to spend more time with  
MoorMaster NxG ?**

Visit [www.moormaster.com](http://www.moormaster.com) to read  
more about MoorMaster NxG and see  
the latest updates.

MoorMaster is a registered trademark in the EU,  
USA, Canada, Brazil, India, New Zealand, Australia  
and Norway, as well as an international WIPO  
registration.

Disclaimer: specifications are subject to change  
without notice.

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