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Alternative Maritime Power Systems

Daiel Hoffmans, International Sales Manager





Alternative Maritime Power Supply & Charging Systems

Reduction of Emissions in Ports



The emissions caused in the port area are a growing problem due to the increasing capacities of the ports.

The onshore power supply units will replace the diesel-powered vessel generators to a large extent.



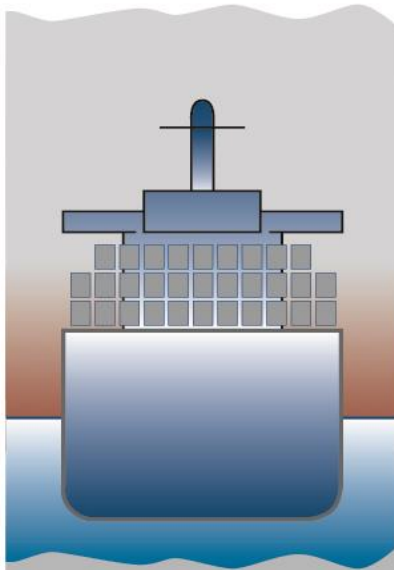
The implementation of emission limit values and environmental specifications in general expedite this development.



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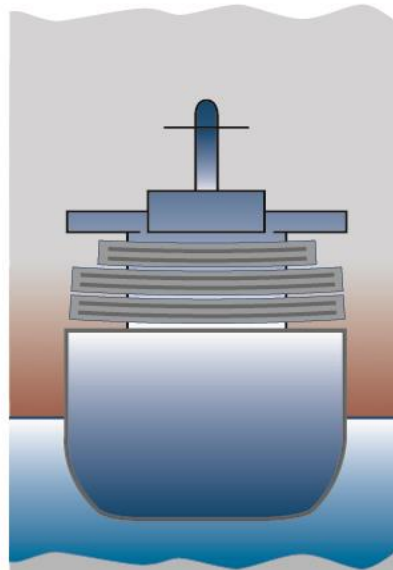
Various Solutions for...

Container Vessels



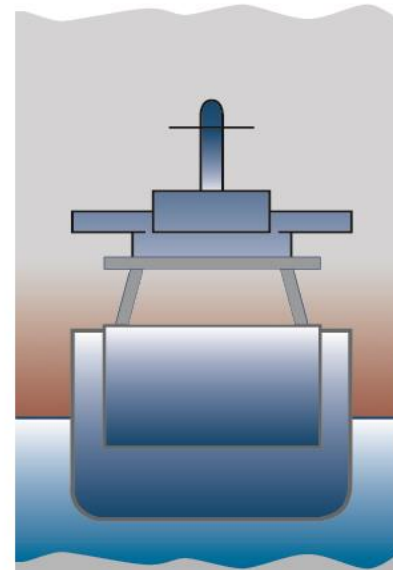
Onshore Power Supply via Cable Reel Container System

Cruise Liner



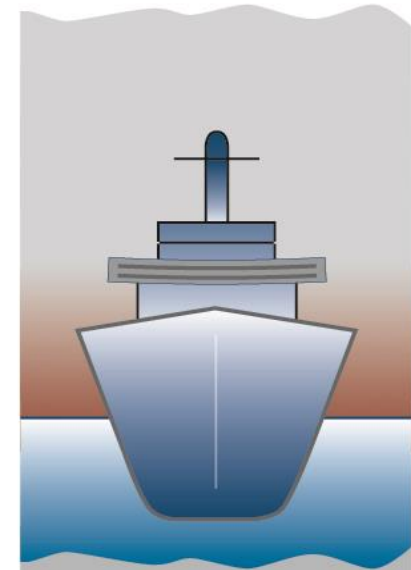
Onshore Power Supply via Cable Reel / Mobile Carrier System

Electrical Ferries



Quick Charging Connection via Pantograph System

Yachts

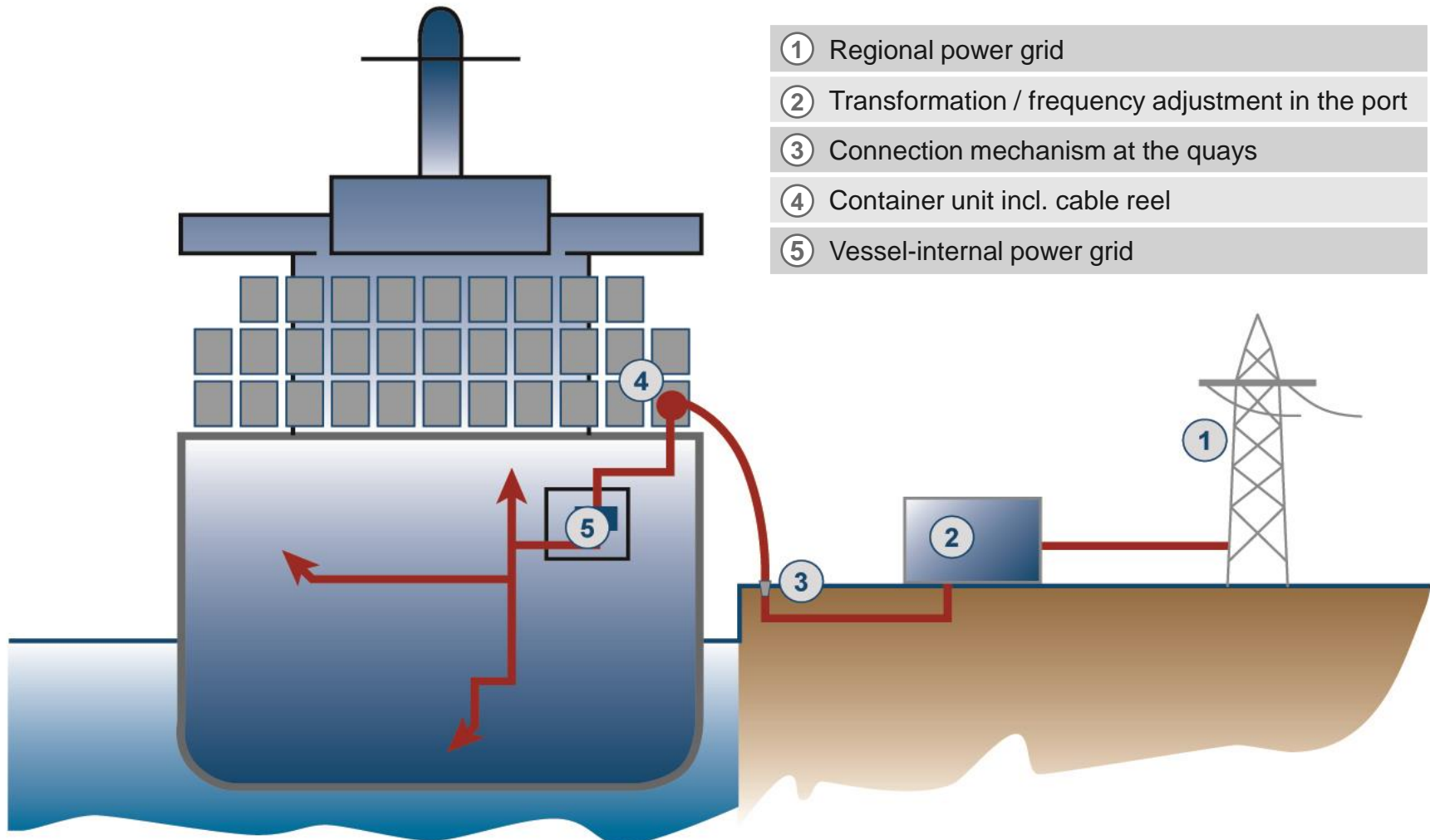


Special Applications via Cable Reel System



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Onshore Power Supply via Cable Reel Container Systems





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Onshore Power Supply via Cable Reel Container Systems for Container Vessels

Onboard System





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Onshore Power Supply via Cable Reel Container Systems for Container Vessels

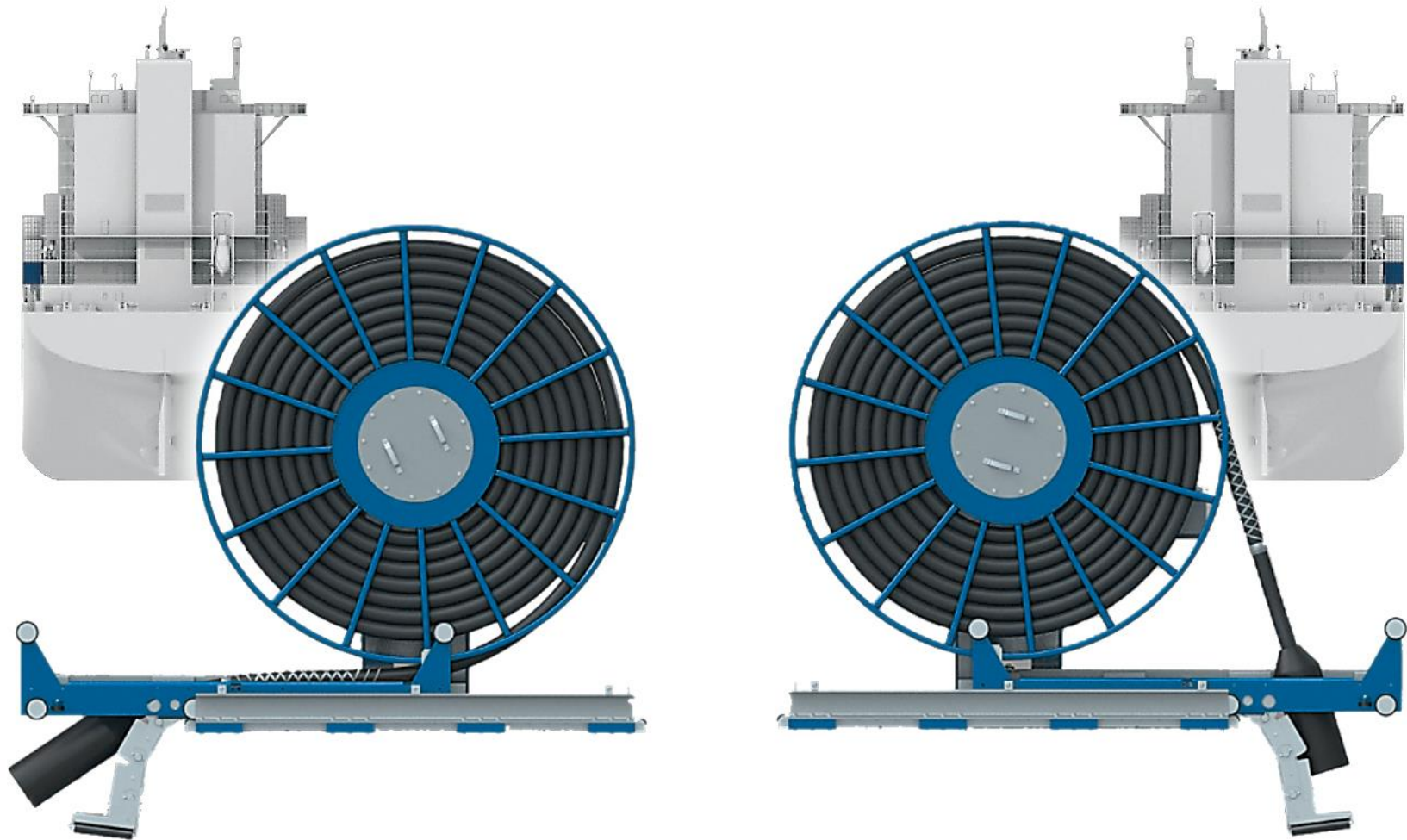


The feed of the onshore power supply for container vessels is realised for example by the installation of a 40 ft. HC-container in the bottom storage row.

The system consists of a spiral cable reel with slip ring assembly and fibre optic rotary connector incl. the drives for the reel and the extension system of the roller conveyer.

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Onshore Power Supply via Cable Reel Container Systems for Container Vessels





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Onshore Power Supply via Cable Reel / Mobile Socket System for Container Vessels

Onshore System



Combination of HC-container installation on board and mobile socket installation onshore.

Flexible mounting heights depending on the local conditions.

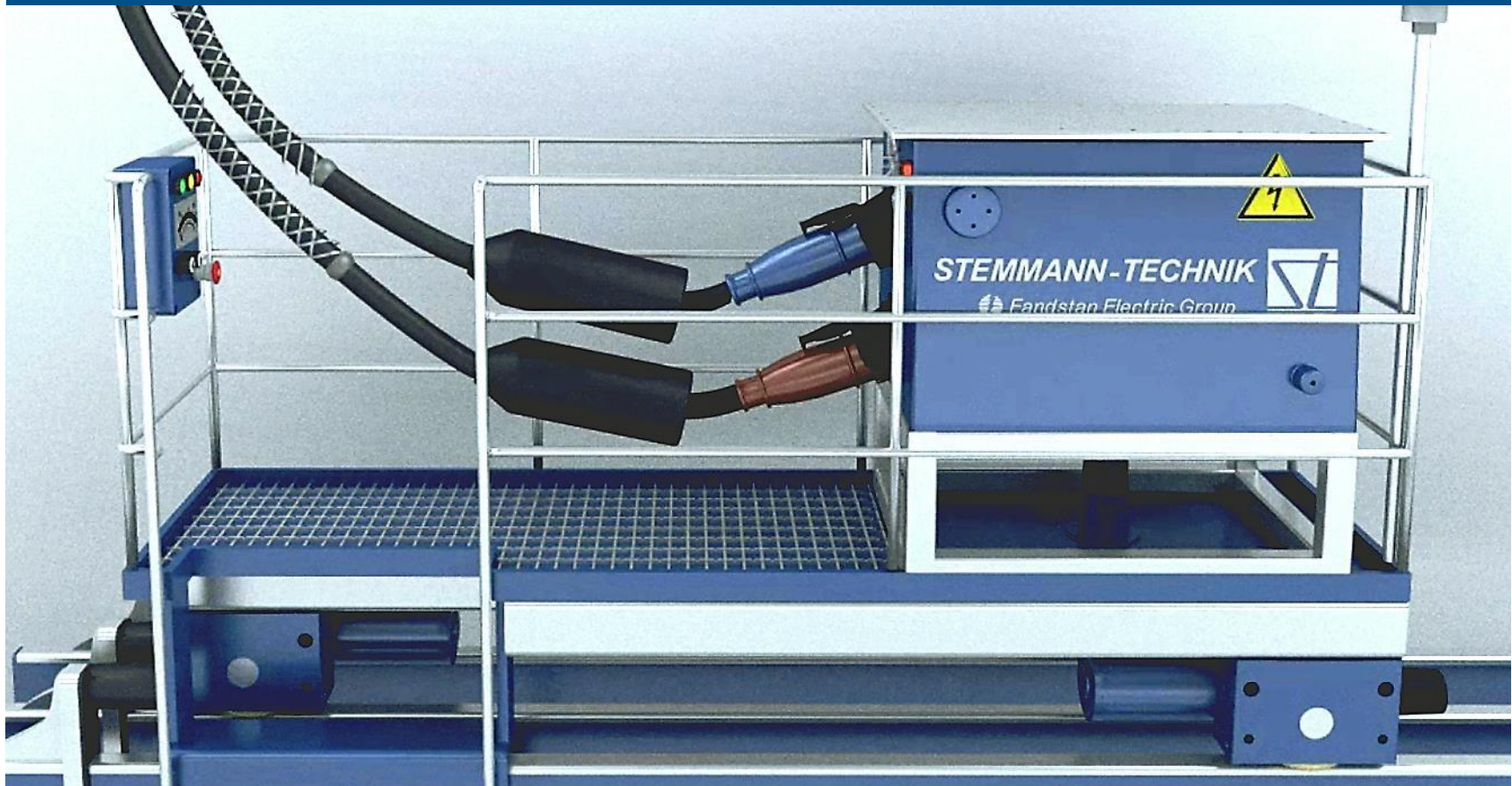
Flexible traveling lengths depending on the local conditions.



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Onshore Power Supply via Cable Reel / Mobile Socket System for Container Vessels

Onshore System





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Container System Advantages



HC-container installation in the bottom storage row requires no special housing installation on board.

Installation/cable pay-off on port- or starboard side possible.

Constant tension on cable by torque motor.

Excess tension-coupling for protection from damage to the mechanical parts.

The operation is effected by means of a radio remote control.

Decades of experience in the construction and manufacturing of cable reels.



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Onshore Power Supply via Mobile Carrier Systems for Cruise Liners

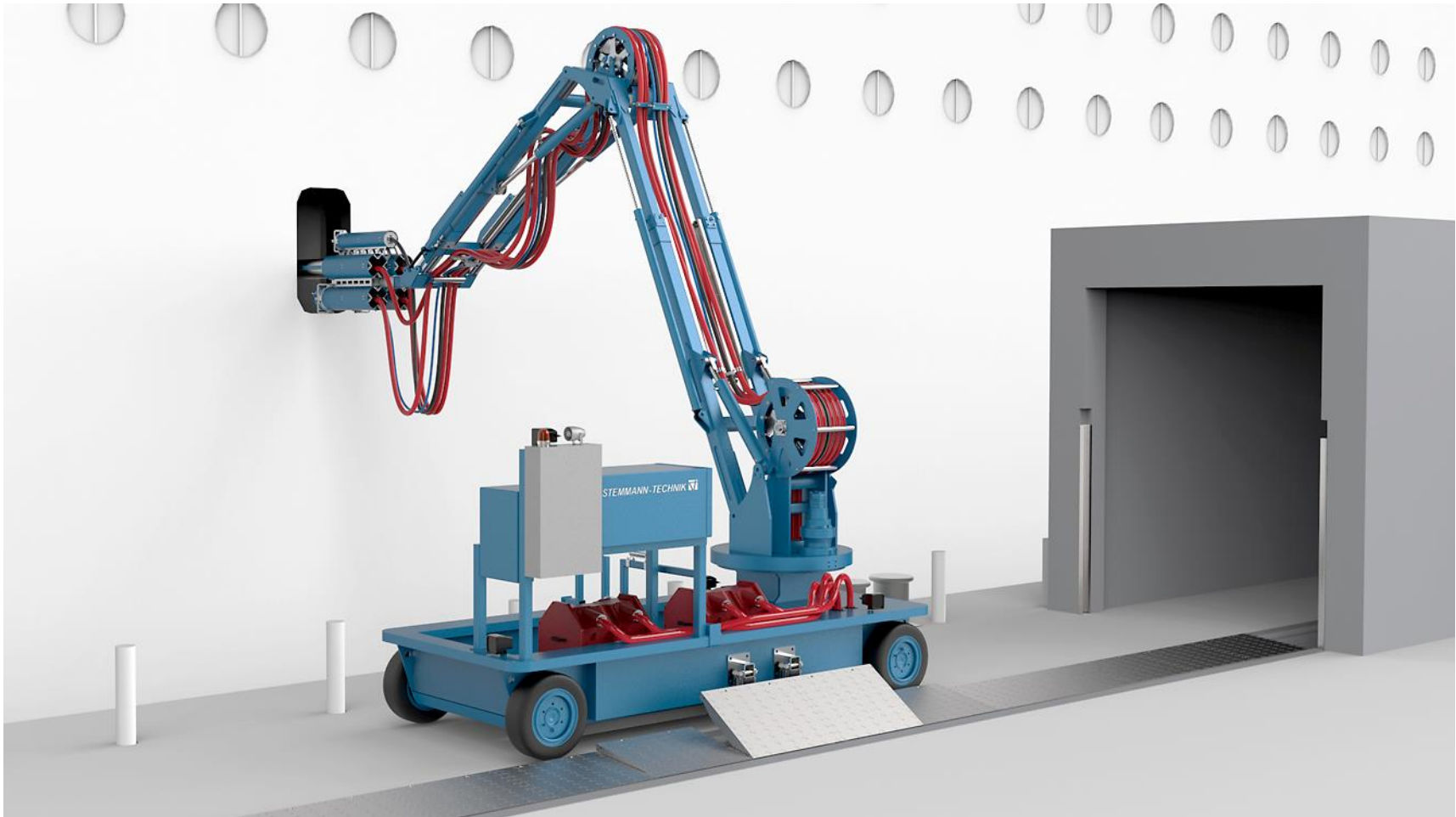
Onshore System





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"SAMP Hamburg Altona Project"





Alternative Maritime Power Supply & Charging Systems

"SAMP Hamburg Altona Project"

Terminal Situation



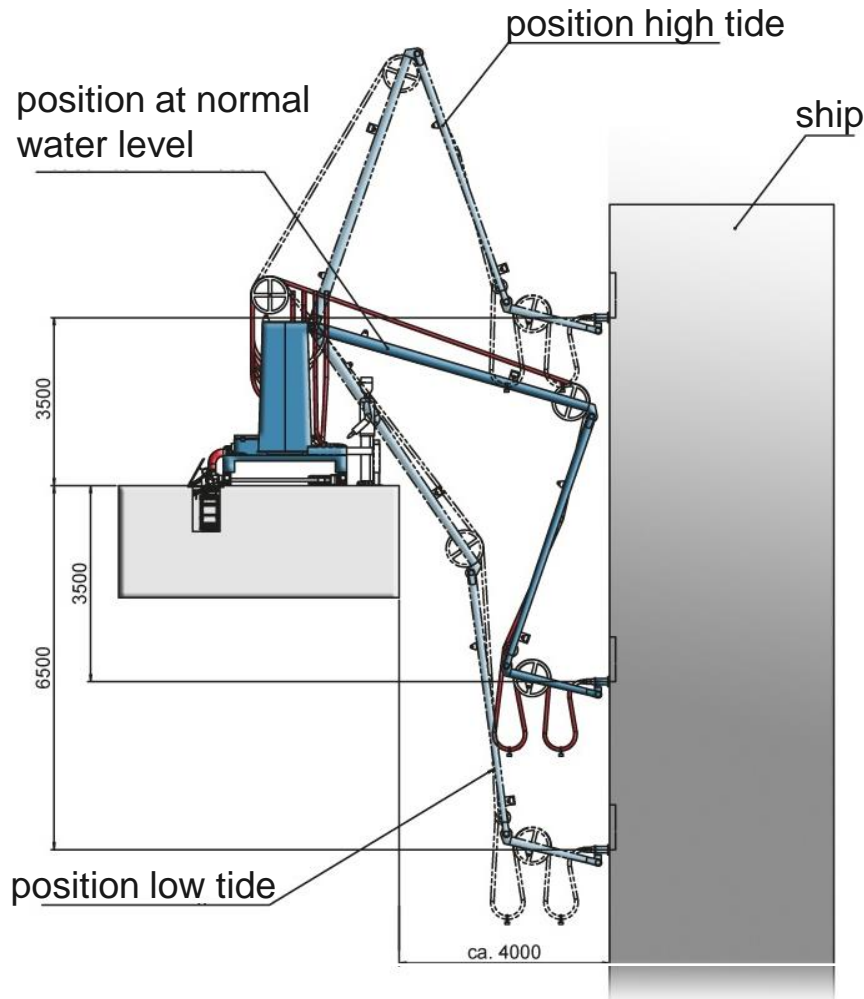
Ship's hatch / Control Cabinet





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Requirements



High tide, height difference hatch/quay: **3.5 m**

Low tide, height difference hatch/quay: **6.5 m**

Travel distance parallel to quay wall: **300 m**

Distance between ship and quay wall: **4 m**

Distance between SAMP-System and quay wall: **approx. 2.5 m**

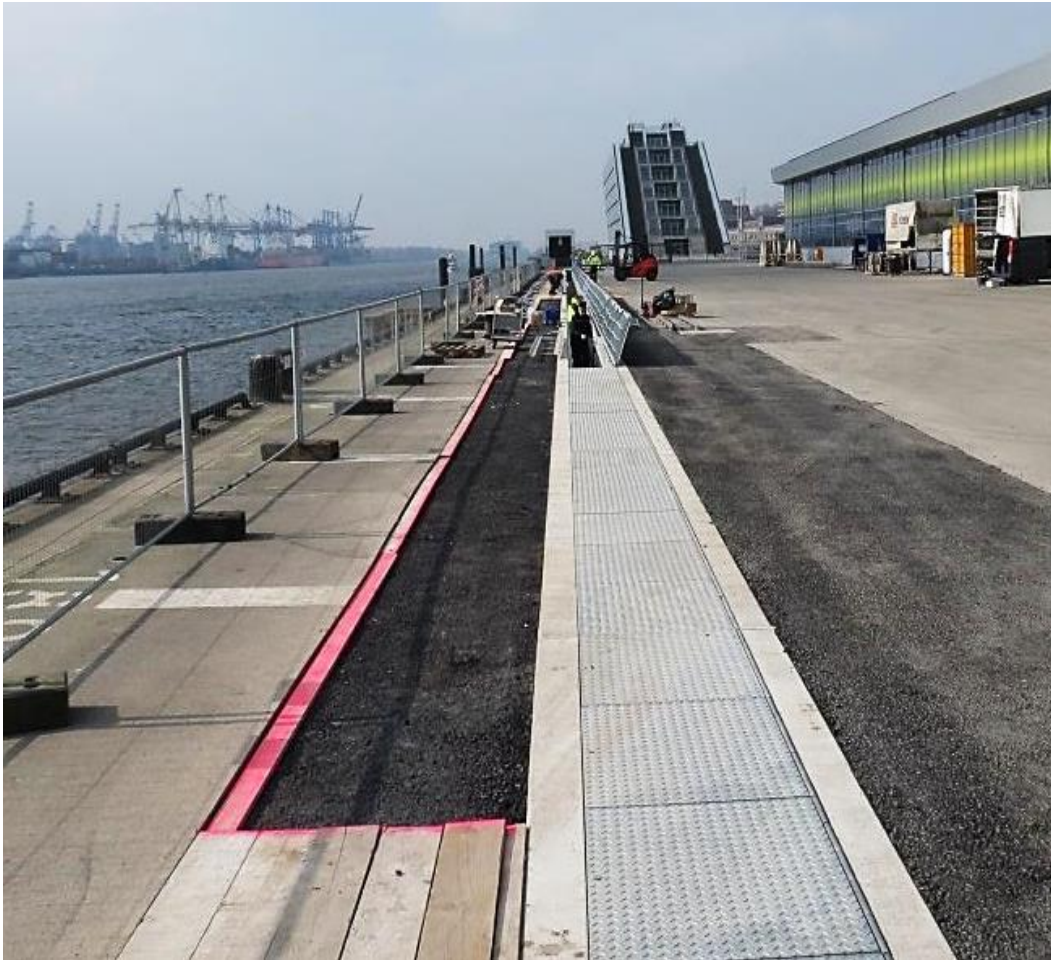
Distance between hatch and socket: **approx. 3.5 m**

Hatch dimensions (h x w): **1.2 x 0.8 m**

Transmittable voltage: **12 MVA**

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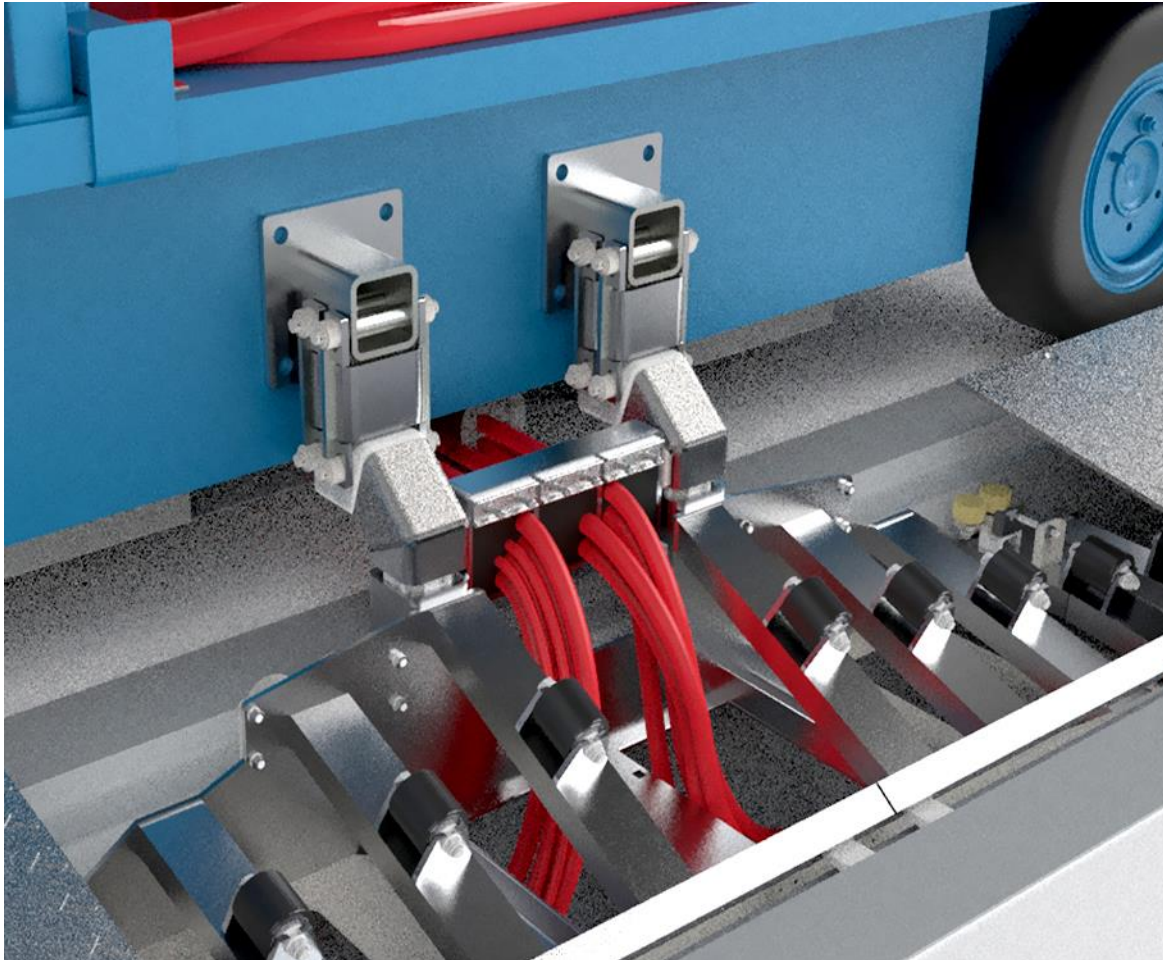
Port Side / Cable Duct





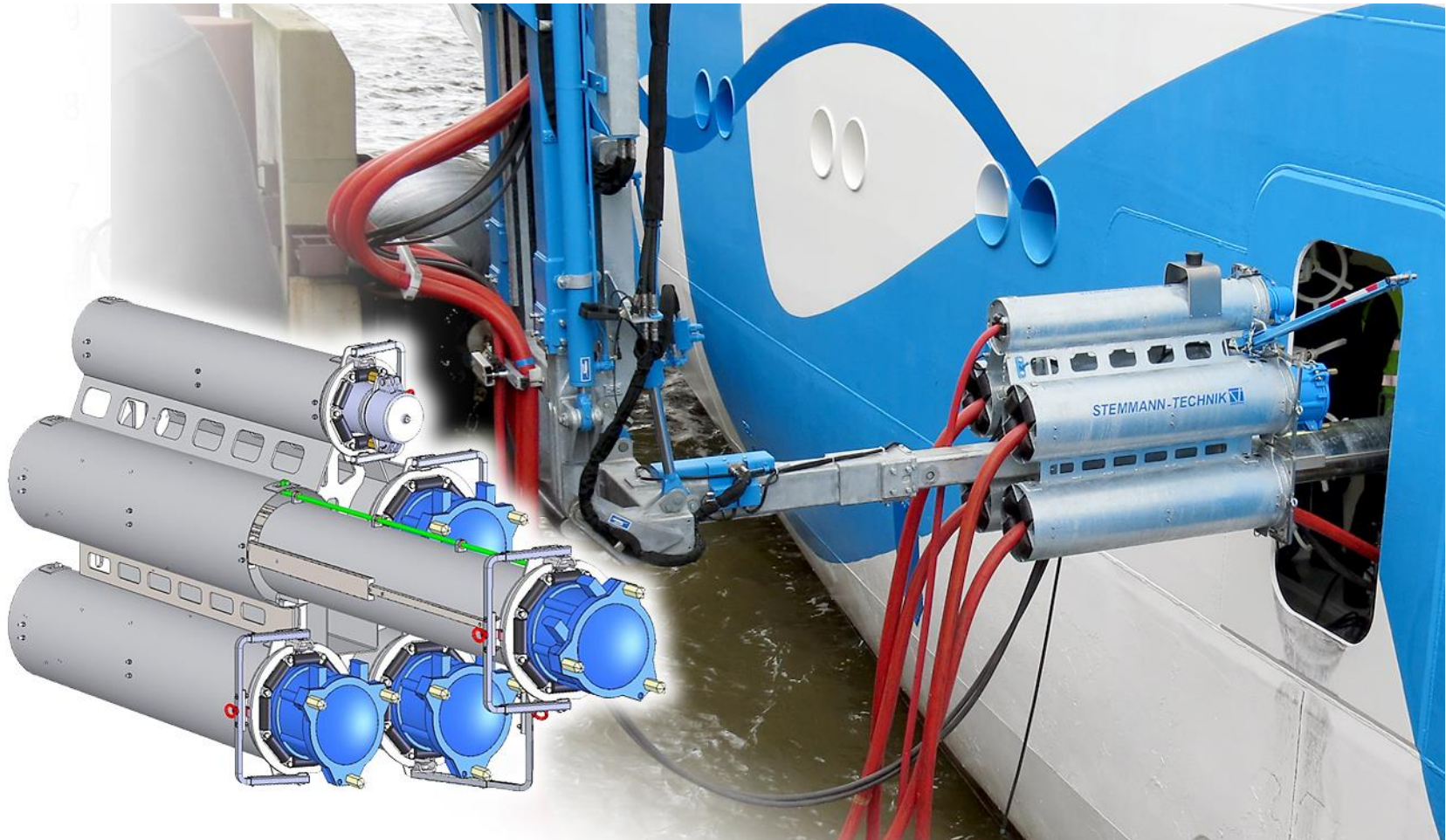
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Transfer Vehicle / Cover Lifting Device with Cable Guideway / Animation



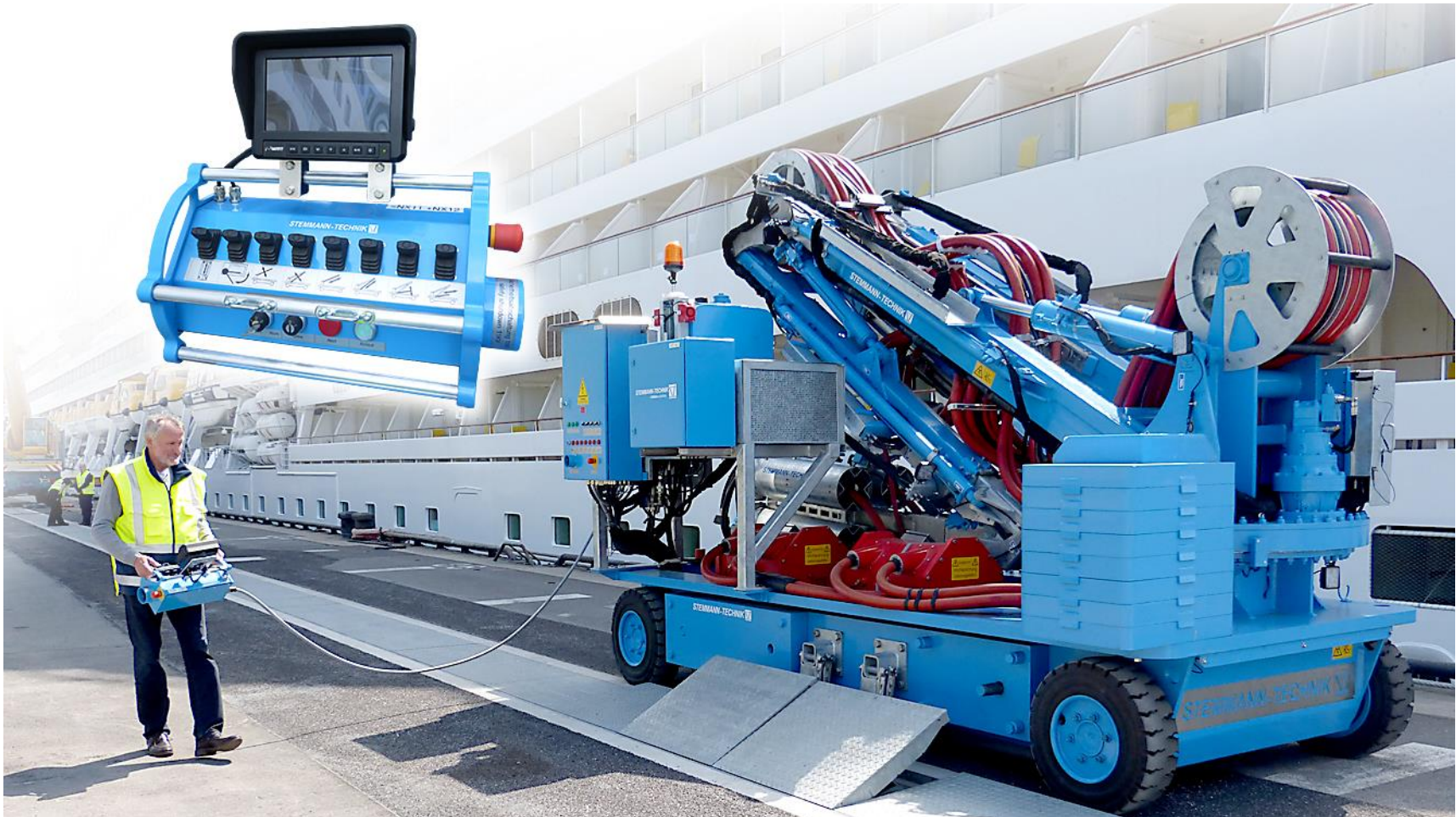
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Telescopic Plug Holder System



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Control Panel





Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries





Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries

System especially for ferries that cover short distances

120 cars / 360 passengers

Fully recharge in 10 minutes

Passenger service since 2015

400 kW to cruise at 10 knots

Replacement of 2,000-hp diesel engine

Saving 264,000 gallons of fuel/year

Saving nearly 3,000 tons of CO₂/year

Powered by 800 kW battery

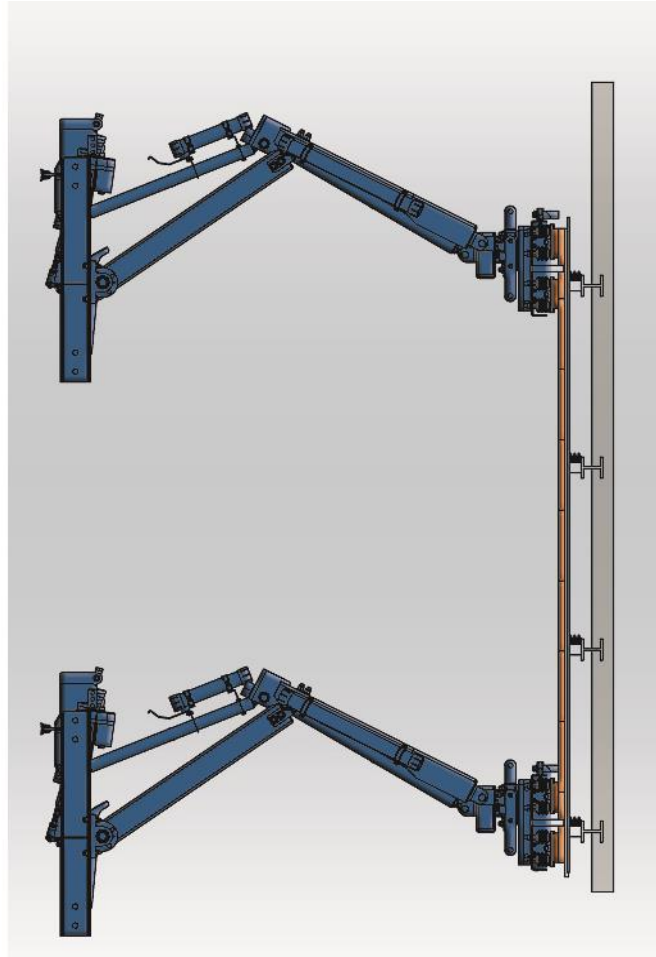




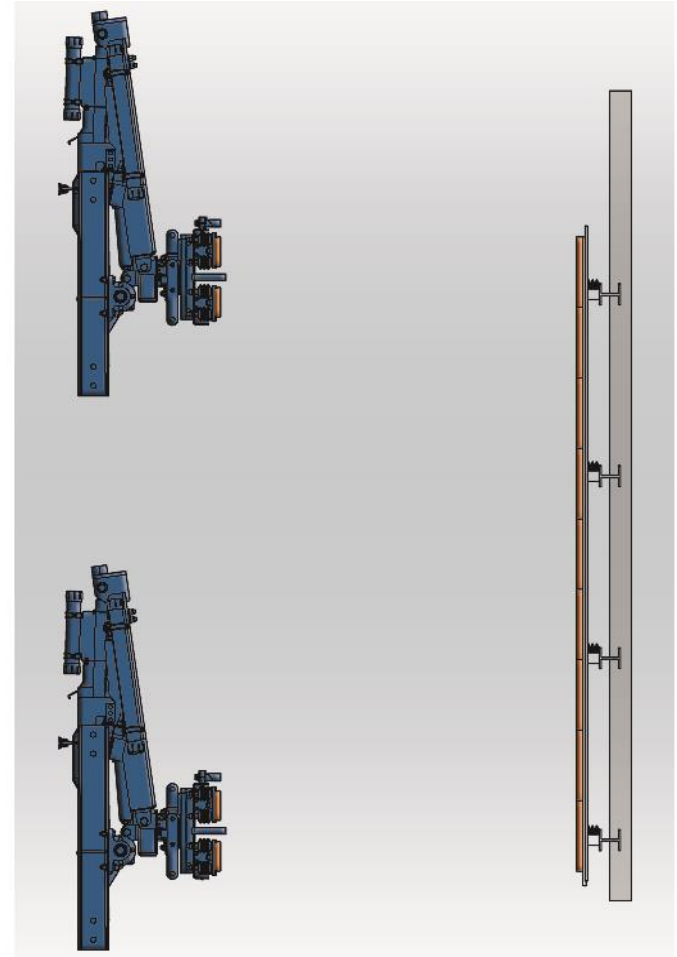
Alternative Maritime Power Supply & Charging Systems

Pantograph System

low tide



high tide





Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries

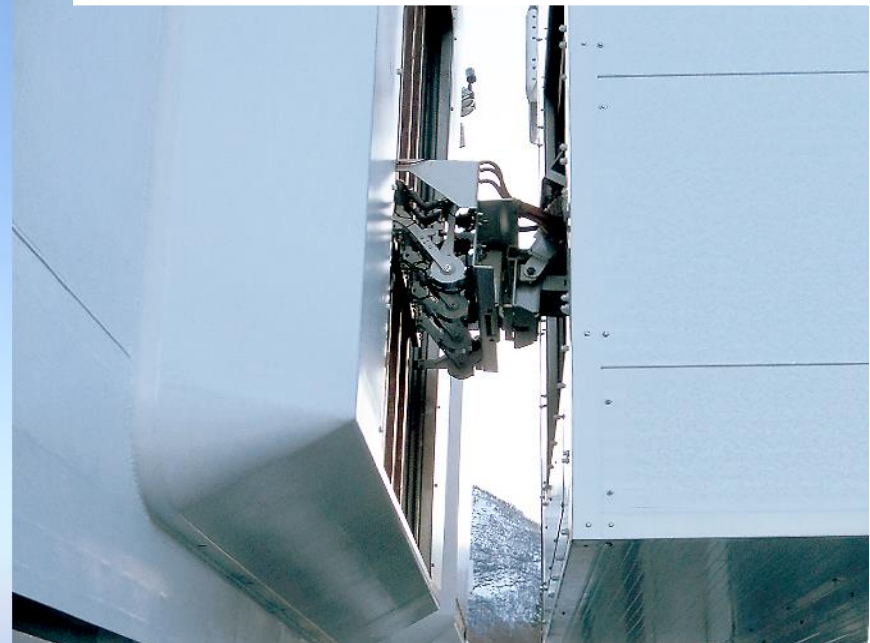
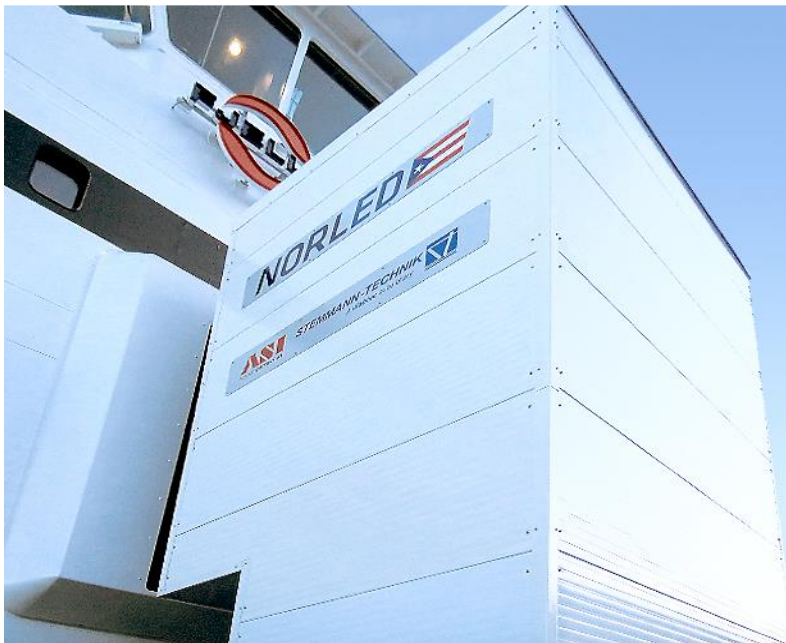
System especially for ferries that cover short distances

Fully automated

Connecting/disconnecting
time only 7 seconds

Compensates the ferry
movement while docking

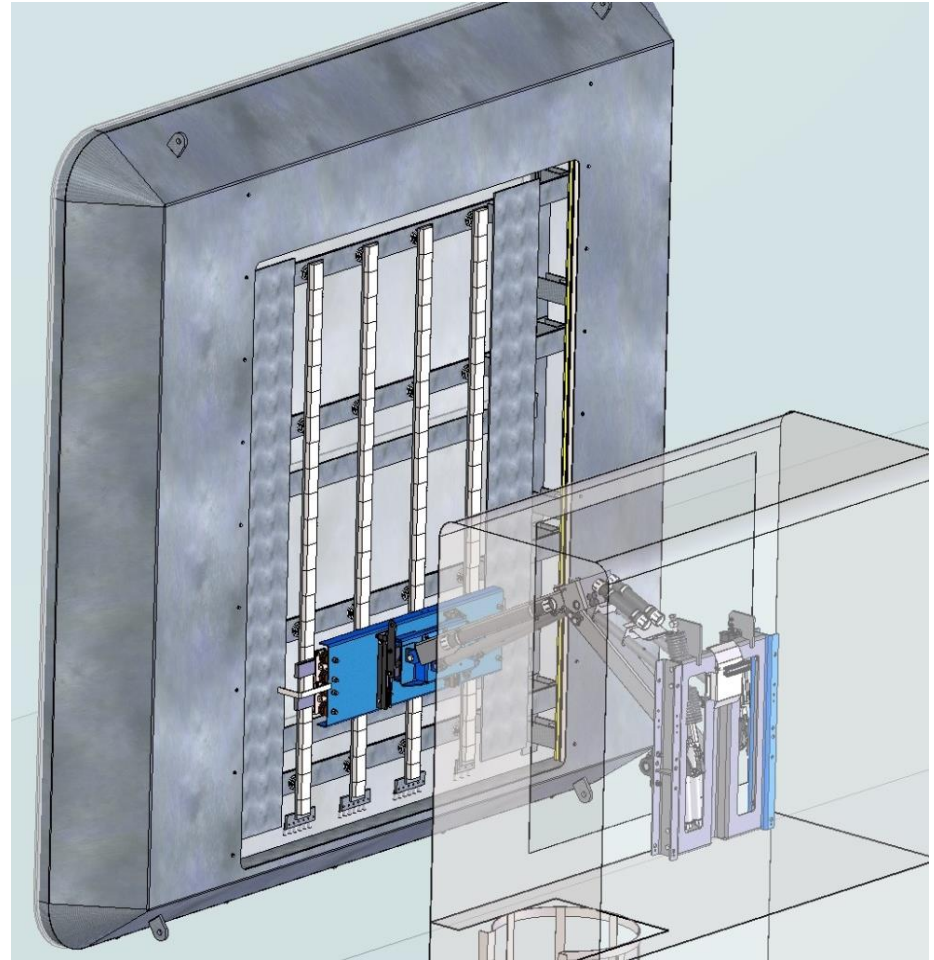
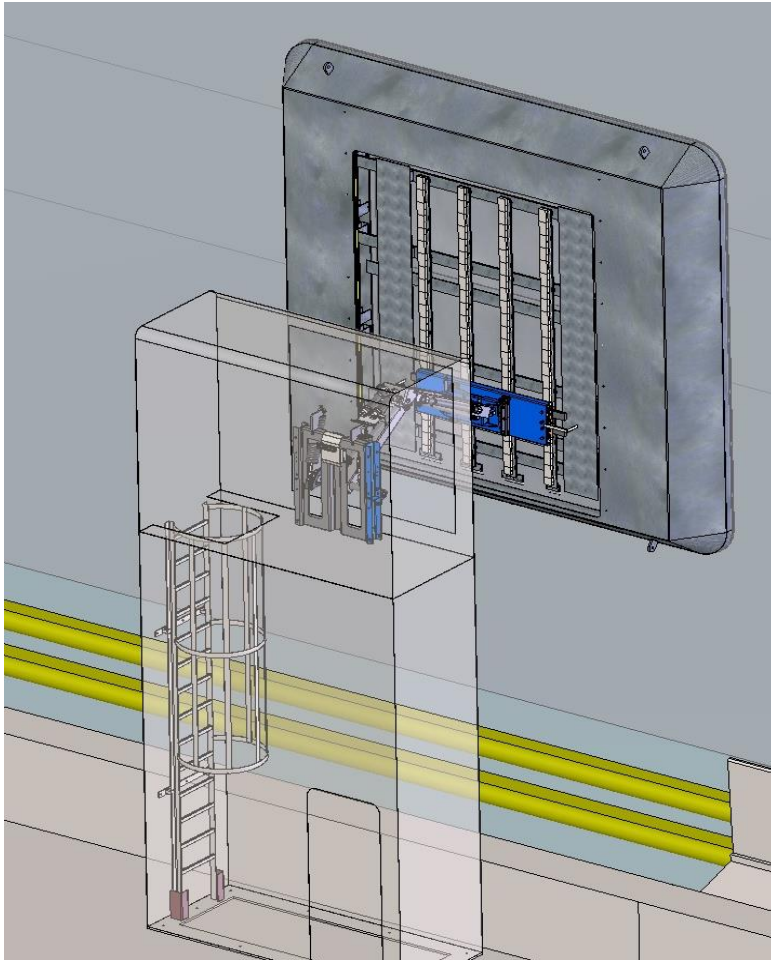
System secured into
attractive housing





Alternative Maritime Power Supply & Charging Systems

Quick Charging Connection via Pantograph Systems for Ferries



Alternative Maritime Power Supply & Charging Systems

Pantograph System



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Thank You for Your Attention

For more detailed information, please visit us at booth 49

Stemmann-Technik GmbH
Headquarter

Niedersachsenstraße 2
48465 Schüttorf | Germany

Phone: +49 5923 81 – 0
Fax: +49 5923 81 – 100

info@stemmann.de
www.stemmann.de

