Cavotec
AMP Systems
Solutions for a clean environment
Shore-to-Ship power is not a new technology, but has application on different type of ships since many years.

The Cavotec Group now has more than 18 years of experience in this matter and is involved in sales and the development for shore-to-ship electrical power supply.
Alternative Maritime Power

Shore-to-Ship power for Ferries since 1988

Göteborg Port -Sweden-
Alternative Maritime Power

Shore-to-Ship power for icebreakers since 1992
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Shore-to-Ship power for US Cost Guard since 2001
3 different maritime applications

One common request:

- a quick and easy connection
What did we learn from our maritime experiences for the container industry?
Experience from Pier 100 Project

Reduce number of cables
Adopting a High Voltage shore-to-ship Connection instead of Low Voltage
Experience from Pier 100 Project

Avoid to lift up 9 cables: too labor intensive
Experience from Pier 100 Project

Reduce size of the plugs. They must be easy to handle
Screw type plug/ socket is too difficult to handle
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Solution

- Safety
- Standardization
- Simplification

A must
Alternative Maritime Power

**Solution**

- Shore-to-ship power 6,6 kV up to 8 MVA

**Ship**
- Cable Management System placed on board of the ship. One or two cables depending from the Ship size

**Shore**
- Shore Junction Boxes with 2 receptacles up to 350A each
- Push-pull system for plug/socket connection
- Optical fibers communication integrated in the power Plug/socket
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Ship side
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Cable Management System on board

2 cables up to 8MVA

1 cable up to 4MVA
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Cable Management System on board

Retractable cable arm to avoid interference with ship hull
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Cable Management System on board

Compact construction of Power Slipring to reduce installation space
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Cable Management System on board

Compact size to permit installation between decks
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Cable management system under deck
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Cable management system in container on ship
Shore side
Shore Junction Box

Plug/Socket

• Housing in tempered cast marine grade aluminium
• Weight less than 7 Kg
• IP 66 when connected and properly closed
• Fiber optic integrated in the plug housing

Standard in POLA/POLB
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Shore Junction Box

- Kirk-Key safety interlocking system
- Two push-pull receptacle Red and Blue
- Fibre Optic receptacle
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Junction box with electric static discharger
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An update of the AMP concept initiated by POLA 3 years ago
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Some statistics

Container ships newbuildings, in units

From 2005 to 2008 the total newbuildings to be delivered are 896 ships of which 52 ships with AMP systems
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Some statistics

Container ships newbuildings, in units

From 2005 to 2008 the newbuildings over 5,000 TEU capacity to be delivered, are 360 ships of which 40 ships with AMP systems.
Alternative Maritime Power

Some statistics

Ocean going carriers committed/fitted with AMP

- NYK Japan
- CSL China
- Peter Doehle Germany
- NSB-Conti Germany
- Evergreen Taiwan
- MSC Switzerland
- CP Offen Germany for P&O
- Patjens Germany for P&O
- Yang Ming Taiwan
- B & N Transocean Finland
- China Shipping Lines
- Hansa Shipping
- Lloyd Triestino
- K-Lines

Total 75 container ships delivered, on order or prepared for AMP
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Shore Connection Solution for Aircrafts

For aircrafts Shore Power Supply is a standard since 40 years.

Cavotec Connectors

2 x 260A
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Airbus A 380 with Cavotec… AMP:
Power is 360 KW, shore 200 V to aircraft 200 V
Will the container ships follow ???
Thank you!