



Faiveley *Stemmann-Technik*
A **Wabtec** Company

THE NEW BRANDING of...

STEMMANN-TECHNIK 
A *Wabtec* subsidiary

/// Strategies for Going Green

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/// It's not easy being green



- Nitrous Oxide (NO_x)
- Particulate Matter (PM_{10})
- Carbon Dioxide (CO_2)

/// What About Pollutants – Nitrous Oxid & Particulate Matter

Contributions of various related sources to total Nitrous Oxide (NO_x) and Particulate Matter (PM₁₀)

| |  Operational & Employee Vehicles |  Trains |  Cargo Handling Equipment |  Heavy Trucks |  Marine Vessels |
|-----------------------------|--|---|---|---|---|
| % NO _x Emissions |  1% |  4% |  23% |  40% |  32% |
| % PM ₁₀ Emission |  <1% |  2% |  24% |  31% |  43% |

/// low hanging fruits



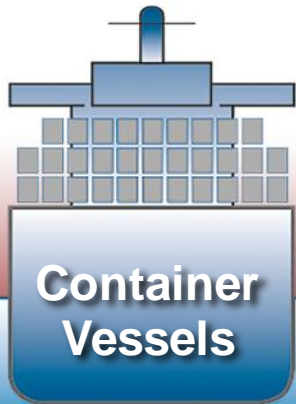
Electrification of diesel-driven vehicles
(ARMG, Trucks, Busses, Vessels, Cars)

Onshore power supply

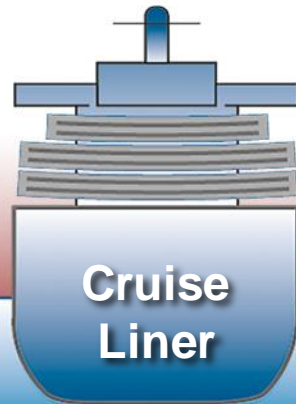
Battery-driven vehicles (charging)

/// Onshore Power Supply & Charging Systems

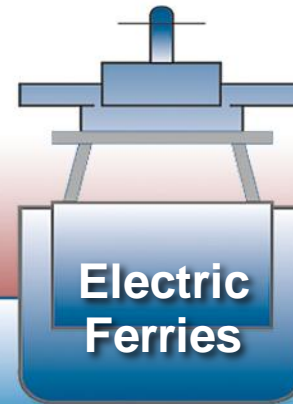
Onshore Power Supply
via Cable Reel
Container System



Onshore Power Supply
via Cable Reel /
Mobile Carrier System



Quick Charging
Connection via
Pantograph System



Special Applications
via Cable Reel
System



/// Average Power Requirements

...for various vessels types, LVSC/HVSC, according to IEC Standard



Container Ship up to 7 MW

Cruise Ship up to 20 MW

Reefer up to 8 MW

Ro-Ro, Ferry up to 8 kW

Tanker up to 6 MW

Bulk
general cargo ship up to 4 MW

ShoreCONNECT

/// Cruise Ships



/// Onshore Power Supply for Cruise Liner



/// Onshore Power Supply for Cruise Liner

...fast and simple connection to the cruise ship



/// Onshore Power Supply for Cruise Liner

...it can be handled by any person



/// Onshore Power Supply for Cruise Liner

...various tidal range compensations



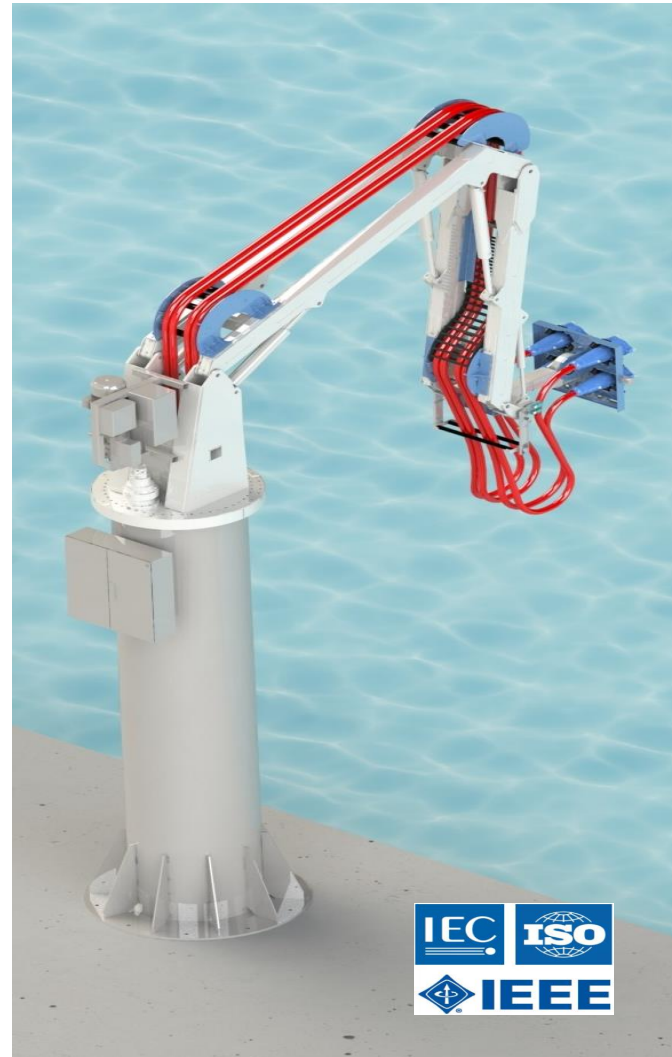
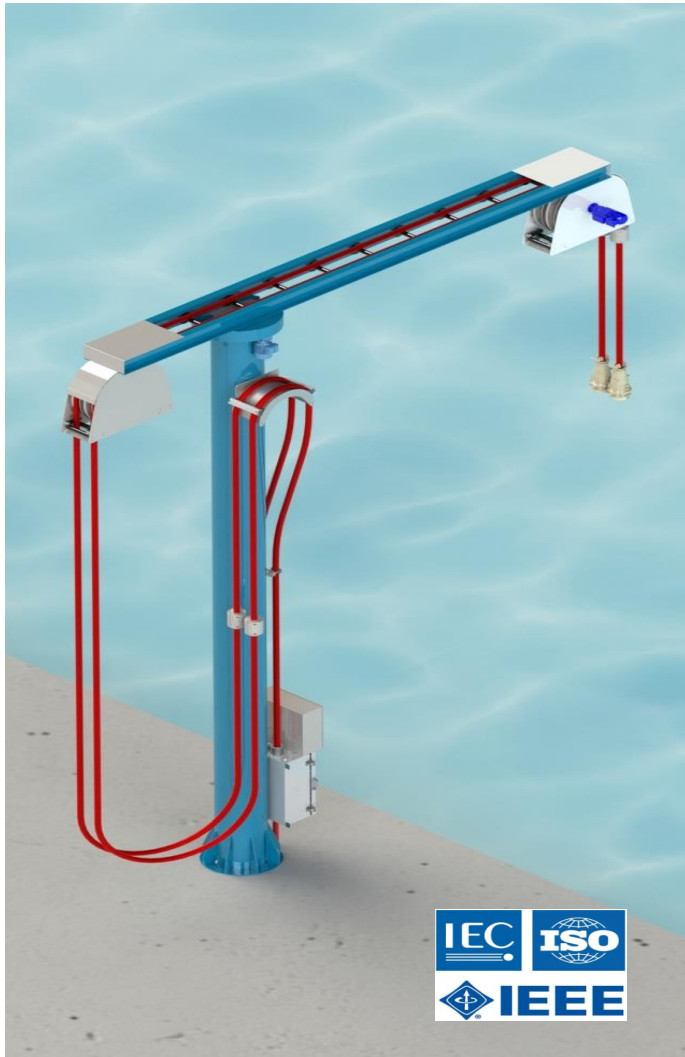
ShoreCONNECT

/// RoRo / RoPax / Special Vessels



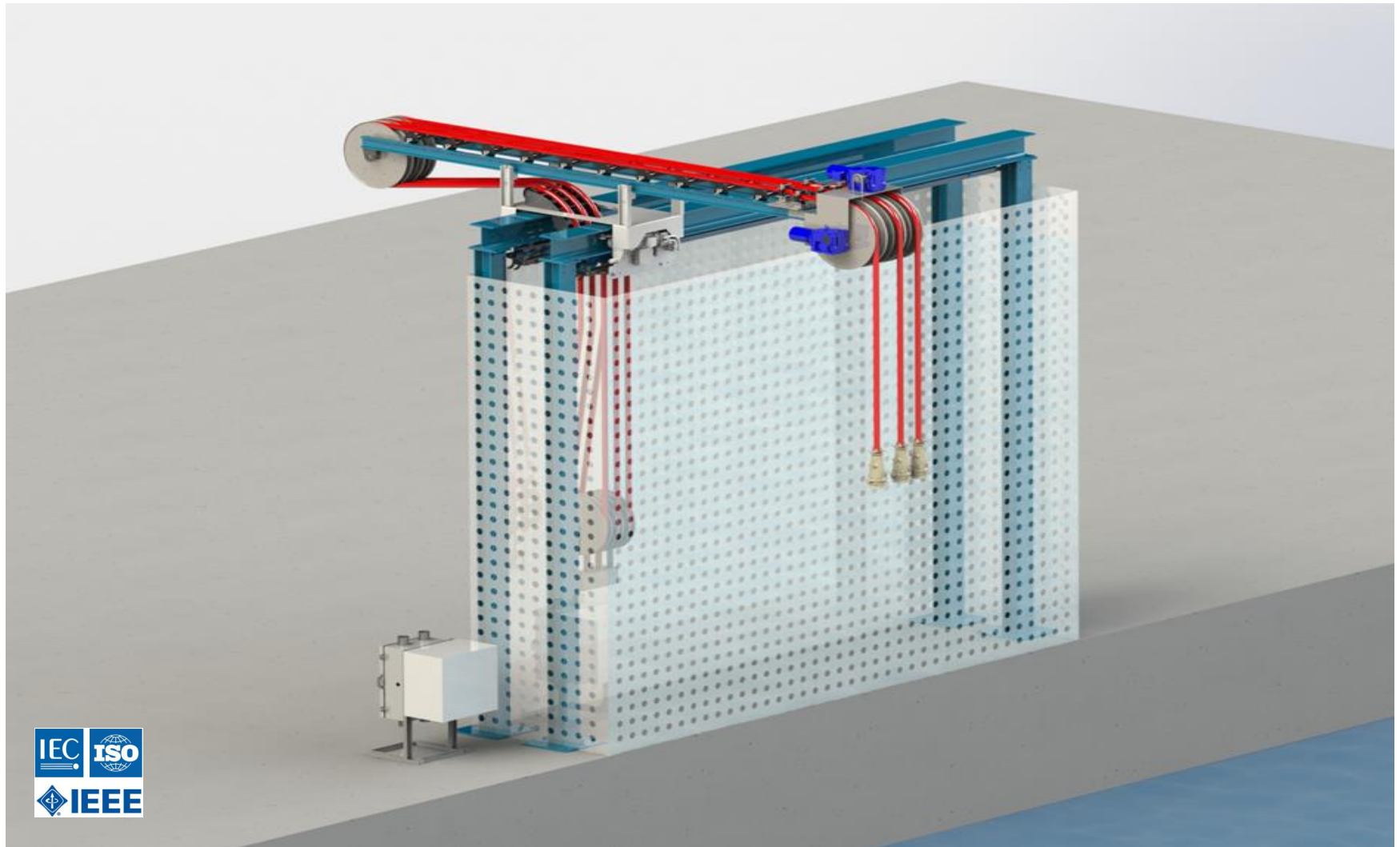
/// ShoreCONNECT Variants

...for various vessels types



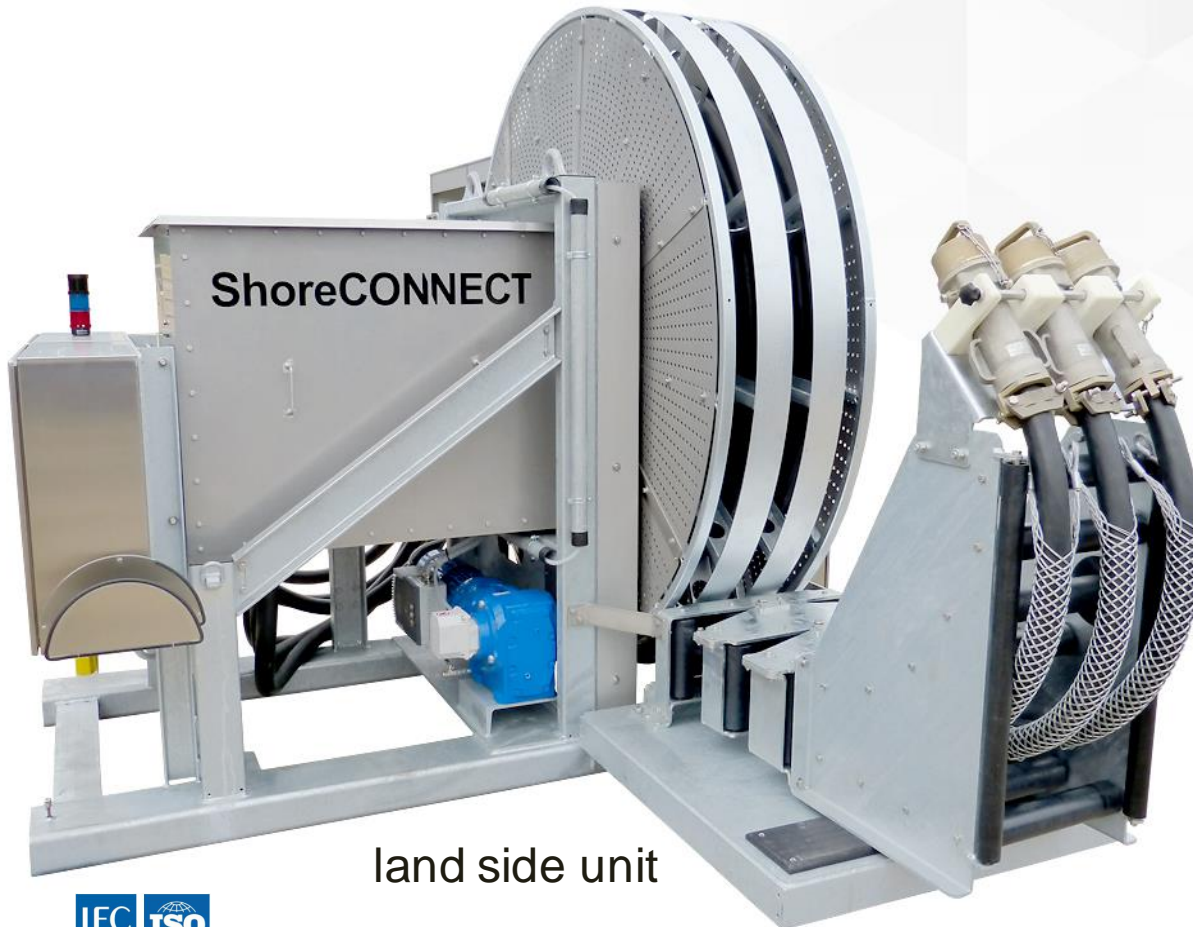
/// Project Rotra Vente ShoreCONNECT Cuxhaven

...for various vessels types



/// ShoreCONNECT Variants

...for various vessels types



land side unit



Connection box as
land side and/or
onboard unit



ShoreCONNECT

/// Container Vessels



/// Cable Reel Container Systems

...for container vessels



/// Cable Reel Container Systems

...for container vessels



The feed of the onshore power supply for container vessels is realized 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.

/// Cable Reel / Mobile Socket System

...for container vessels



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

Flexible mounting heights depending on the local conditions.

Flexible traveling lengths depending on the local conditions.

FerryCHARGER

/// Charging worlds' seaside

Automated
solution for your
vessel within 7 seconds



/// Power Requirements – up to 8 MW, connection time 7 seconds

...for various vessels, low voltage, medium voltage



low voltage version

400 V-1.000 V

1.000-3.000 Amp (AC)

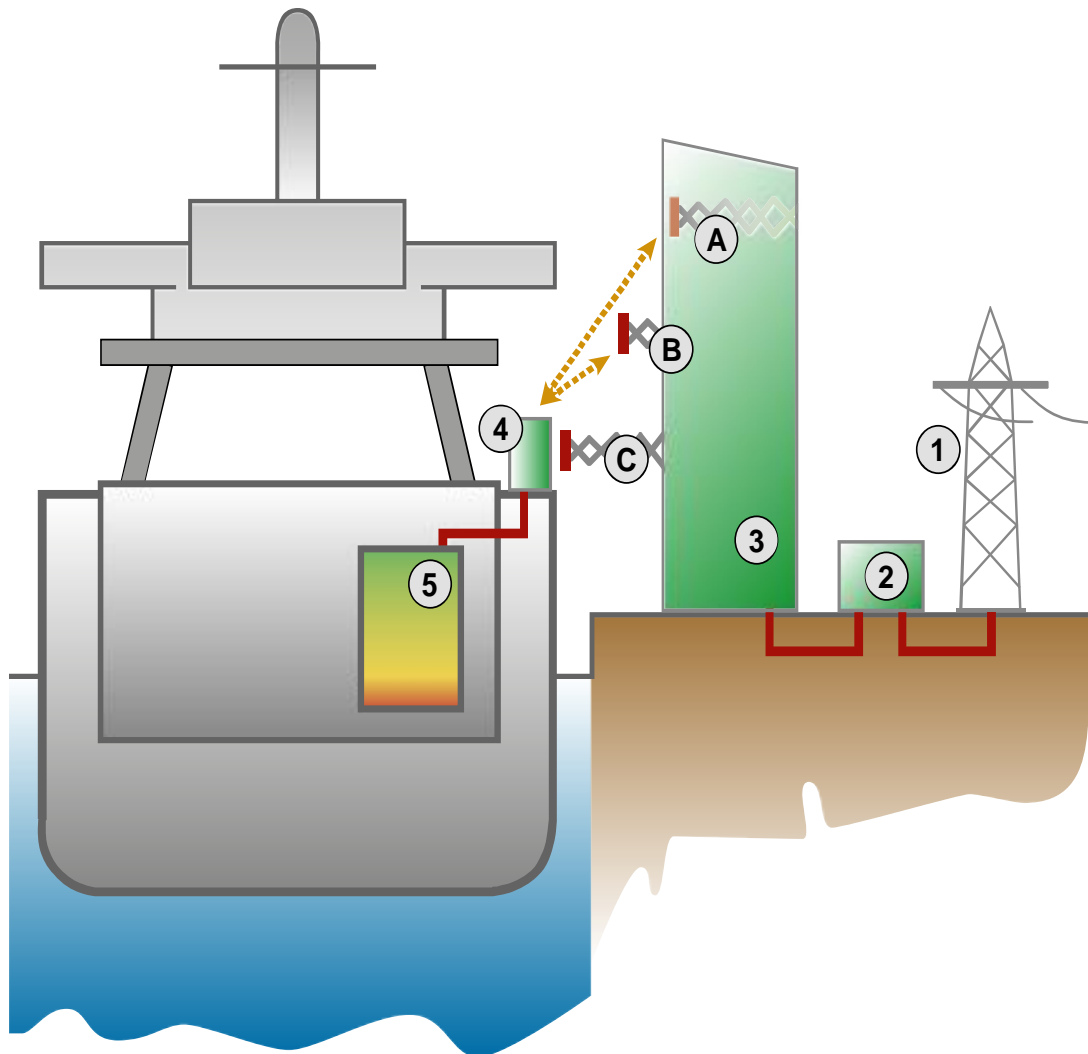
1.000-5.000 Amp (DC)

medium voltage version

1-11 KV
up to 620 Amp (AC)

/// FerryCHARGER for Electric Ferries

...automated tower solution within 7 seconds



1 Regional electricity grid

2 Transformer station

3 FerryCHARGER
autom. tower version

4 Ship side unit

5 Battery storage
of the ferry

A,B,C Automatic
supply process

↔ Sensors for position
detection

/// FerryCHARGER for Electric Ferries

...automated tower solution within 7 seconds



various
tower
heights



/// FerryCHARGER for Electric Ferries

Crossing Anda-Lote, Norway





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Thank you for your attention.

