



Wabtec

STEMMANN-TECHNIK

Charging & Power Transfer

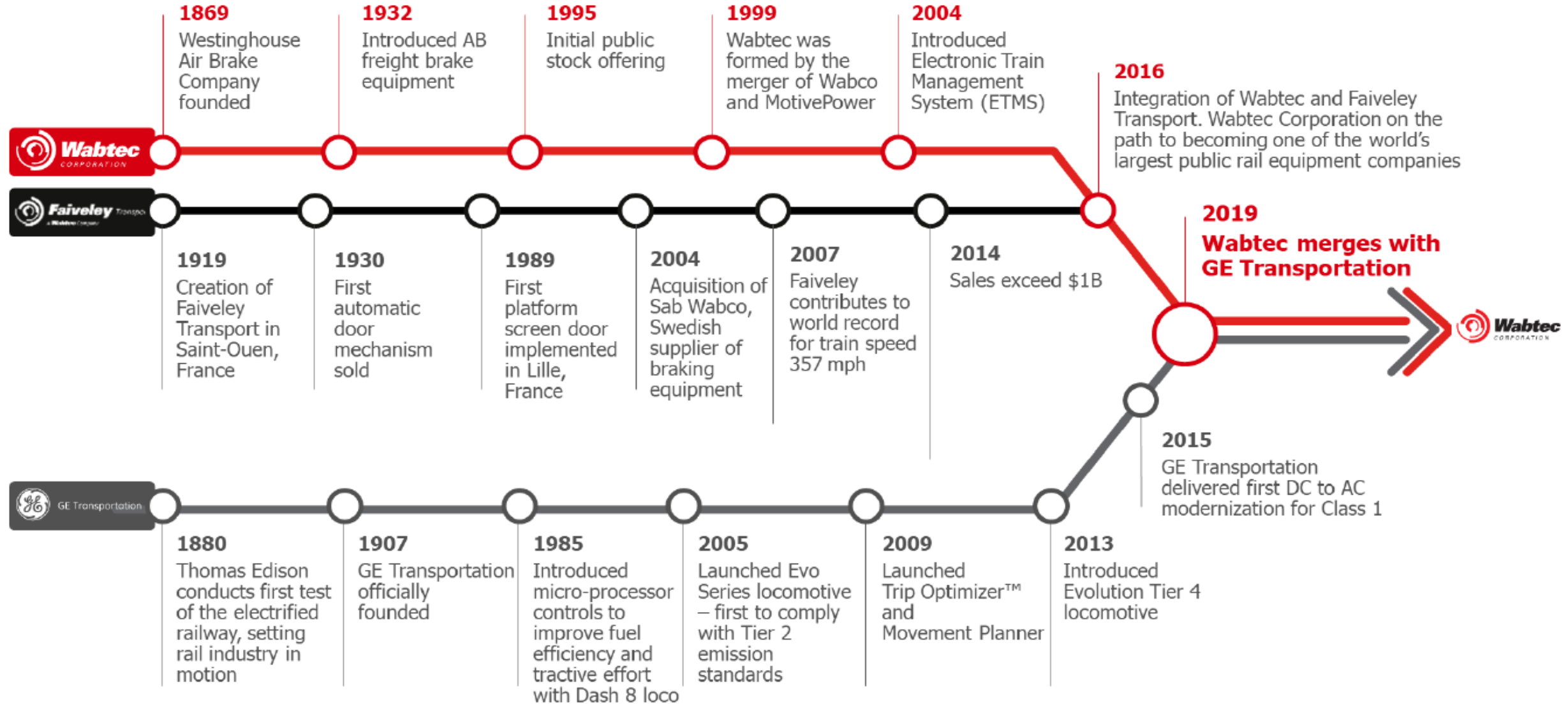
March 2025

SIEMENS
ENERGY

Cooperate with
Siemens Energy Ltd. in Hongkong.



WABTEC Corporation History



Global Freight
headquarters
CHICAGO, IL

Corporate
headquarters
PITTSBURGH, PA

Global Transit head
PARIS, France

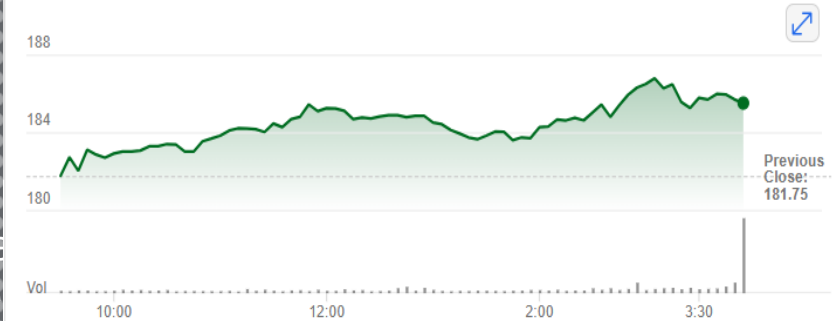
Westinghouse Air Brake Technologies Corp

NYSE: WAB

185.60 USD ▲ +3.85 (+2.12%) today

March 19, 7:00 PM EDT · Market Closed

Day Week Month Year 5 Year Max



Open	182.11	P/E	30.76	Vol	12.00
High	186.88	52wk High	210.88	Avg Vol	1.49 M
Low	181.97	52wk Low	141.71	Mkt Cap	31.71 B

27K
EMPLOYEES

50
COUNTRIES

\$ 9,5B
REVENUE

FORTUNE
500
COMPANY



/// Ports & Maritime Product Portfolio



Content

FerryCHARGER

[panto-type](#)[side-panto](#)[tower-type](#)[bow-type](#)[REACH-type](#)[Brochure](#)

ShoreCONNECT

[Reel](#)[CMS](#)[Container](#)[Boom](#)[SC-Vehicle](#)[Brochure](#)

eBus, eTruck

[ChargingREEL](#)[ChargingPANTO](#)[Depot PANTO](#)[MiningPANTO](#)

CableREEL

[Power Cable Reel \(PCR\)](#)[Spreader Cable Reel \(SCR\)](#)[Festoon Systems](#)

Service

[Preventive Maintenance](#)

Other

[Wabtec Sustainability Report 2022](#)

Video

[Video Center](#)[LinkedIn](#)



Wind Power
SlipRINGS

Contactless
SlipRINGS

Port Optimizer

E-BusCHARGING

ConductorBAR

ShoreCONNECT

SlipRINGS

CableREEL

FerryCHARGER

Charging and Power
Transfer solution to mobile
Consumers such as:

- Cranes (STS, RTG, ASC,...)
- Ferries
- Cruise & Container vessels
- Vehicles (SCs, FTS,...)
- eBus and eTruck
- Intralogistics
- Wind power

Wabtec's latest technology innovation for electrification

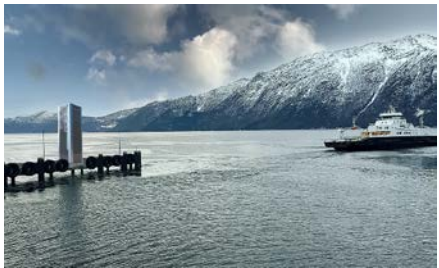


Key Facts

- More than 100 years of experience and expertise in developing and manufacturing energy transportation solutions
- Market leader for charging Solutions for Electrically operated consumer
- World's first fully-automated charging system with FerryCHARGER



eBus charging systems



Vessel charging systems



Slip rings for wind power pitch systems



Mining electrification solutions



Shore power cable management systems

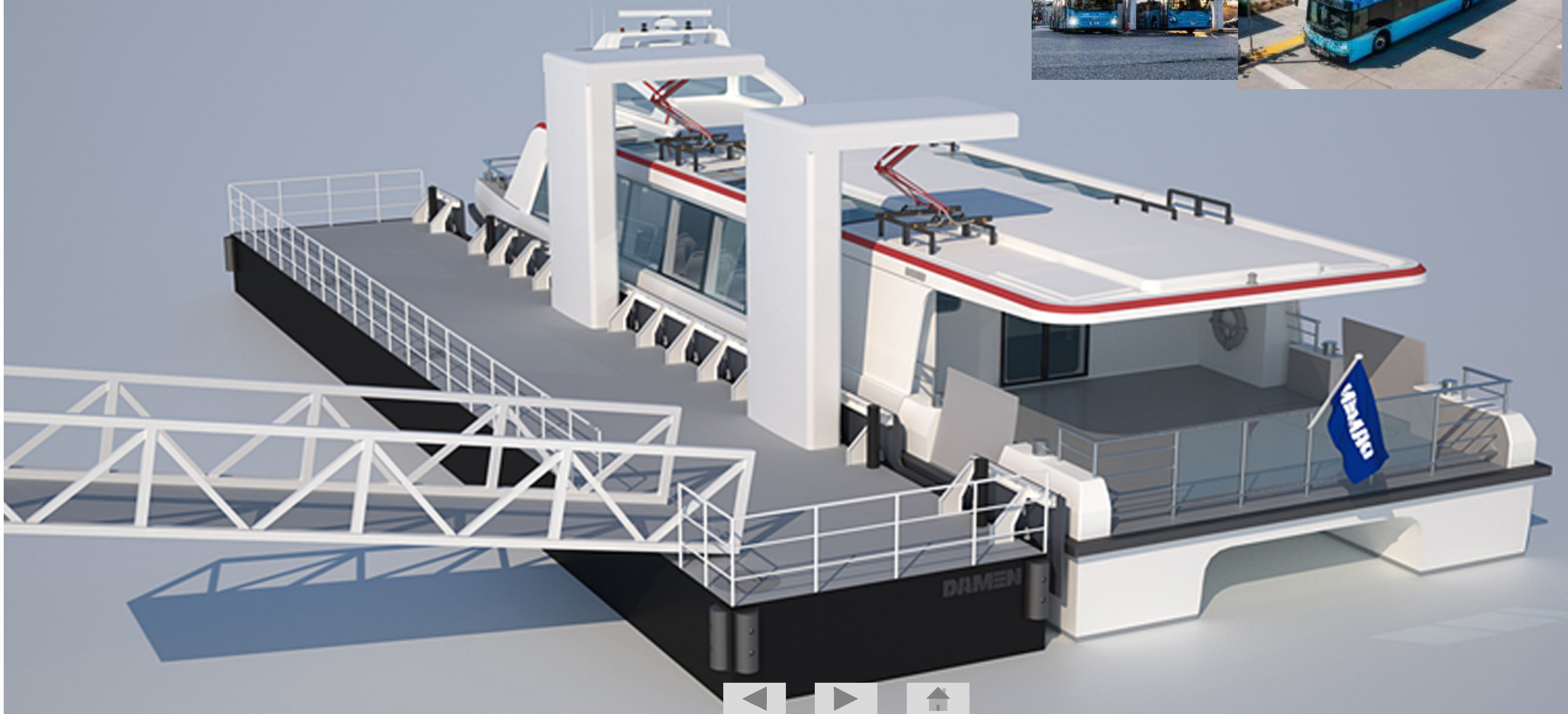
FerryCHARGER

panto-type



FerryCHARGER (Panto Type)

Concept for inverted Pantos





FerryCHARGER

Oslofjord-Ferries, Oslo, Norway (1/3)



Panto-type	Norway
Vessel	Newbuild, 350 Pax
Connection	Oslo City hall to Oslofjord Islands
Operator	Boreal Sjø on behalf of Ruter
Scope	1 Landside 5 Shipside
Operation Date	2022
Power	2 x 1,5 MW 1000V (DC) / 1500 A
Contacting	Fully automated Connection time: 15 sec
Notes	Ponton-based solution for tidal compensation





FerryCHARGER

Oslofjord-Ferries, Oslo, Norway (2/3)



Panto-type	Norway
Vessel	Newbuild, 350 Pax
Connection	Oslo City hall to Oslofjord Islands
Operator	Boreal Sjø on behalf of Ruter
Scope	1 Landside (2 Twin-System) 5 Shipside
Operation Date	2022
Power	2 x 1,5 MW 1000V (DC) / 1500 A
Contacting	Fully automated Connection time: 15 sec
Notes	Ponton-based solution for tidal compensation





FerryCHARGER

Oslofjord-Ferries, Oslo, Norway (3/3)



Panto-type	Norway
Vessel	Newbuild, 350 Pax
Connection	Oslo City hall to Oslofjord Islands
Operator	Boreal Sjø on behalf of Ruter
Scope	1 Landside (2 Twin-System) 5 Shipside
Operation Date	2022
Power	2 x 1,5 MW 1000V (DC) / 1500 A
Contacting	Fully automated Connection time: 15 sec
Notes	Ponton-based solution for tidal compensation



FerryCHARGER side-panto-type





FerryCHARGER

Altena V and VI, Riveer, Gorinchem, The Netherlands



side-panto	
Vessel	Newbuild Battry Electric , Watertaxi, Holland
Connection	Gorinchem, inner city
Operator	Veerdienst Riveer
Scope	1 Landsides 2 Ships with 1 Shipside each
Erected	2023
Power	750 VDC / 2200 A
Tolerance	+/-2° roll, +/-1° pitch/yaw 800 mm contact distance
Notes	„Ship of the Year“ Award 2024



FerryCHARGER

Altena V and VI, Riveer, Gorinchem, The Netherlands



side-panto

Vessel	Newbuild Battery Electric , Watertaxi, Holland
Connection	Gorinchem, inner city
Operator	Veerdienst Riveer
Scope	1 Landsides 2 Ships with 1 Shipside each
Erected	2023
Power	750 VDC / 2200 A
Tolerance	+/-2° roll, +/-1° pitch/yaw 800 mm contact distance
Notes	Charging protocol is ISO 15118 (MCS)



FerryCHARGER

Altena V and VI, Riveer, Gorinchem, The Netherlands



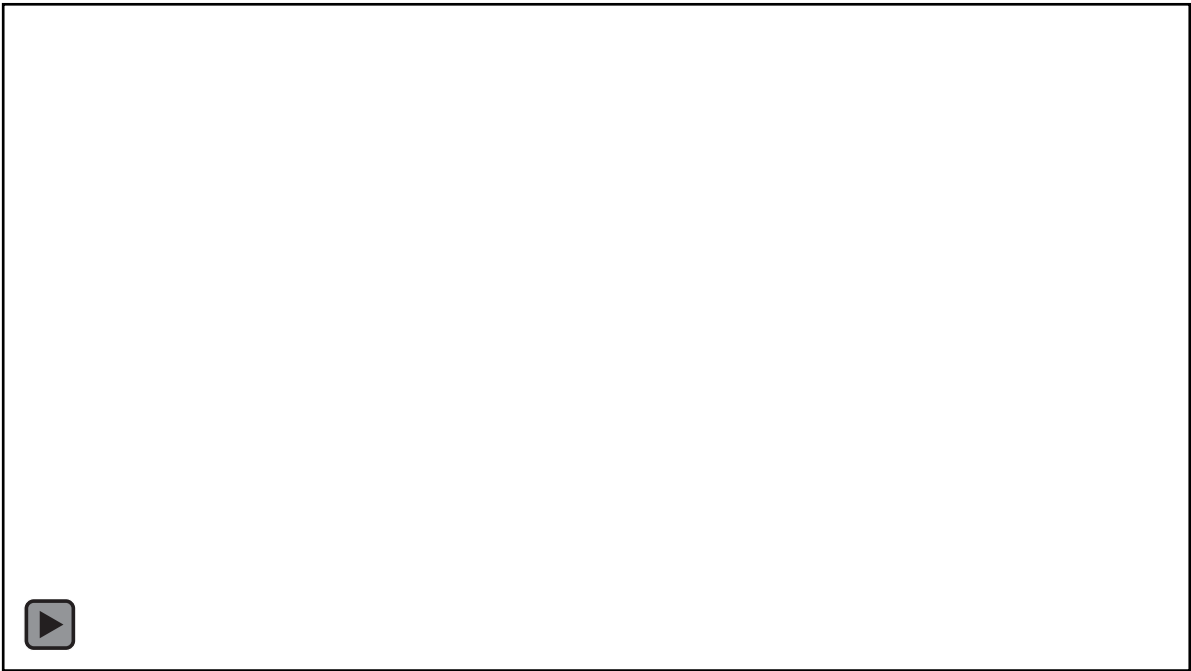
side-panto	
Vessel	Newbuild Battry Electric , Watertaxi, Holland
Connection	Gorinchem, inner city
Operator	Veerdienst Riveer
Scope	1 Landsides 2 Ships with 1 Shipside each
Erected	2023
Power	750 VDC / 2200 A
Tolerance	+/-2° roll, +/-1° pitch/yaw 800 mm contact distance
Notes	„Ship of the Year“ Award 2024





FerryCHARGER

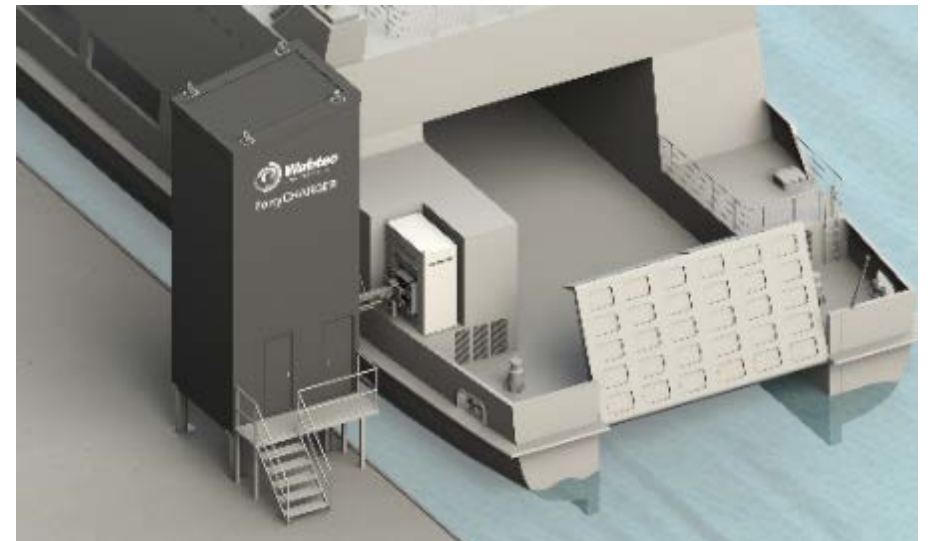
Altena V and VI, Riveer, Gorinchem, The Netherlands



side-panto	
Vessel	Newbuild Battery Electric , Watertaxi, Holland
Connection	Gorinchem, inner city
Operator	Veerdienst Riveer
Scope	1 Landsides 2 Ships with 1 Shipside each
Erected	2023
Power	750 VDC / 2200 A
Tolerance	+/-2° roll, +/-1° pitch/yaw 800 mm contact distance
Notes	- „Ship of the Year“ Award 2024 - IEC 61851-23-3 compliant



FerryCHARGER tower-type



FerryCHARGER

Denmark, Rødby-Puttgarden, MV FUTURA



tower-type

Denmark

Vessel

1 Newbuild, 2 Conversions
battery-electric,
147 m, 66 Freight units
(1.200 m tracks), 140 PAX

Connection

Rødby-Puttgarden

Operator

Scandlines
Integrator: NES

Scope

2 Landsides (Rødby)
1 Shipside

**Operation
Date**

2024

Power

15 MW, High-Voltage
590 V, 1600 A

Contacting

Fully automated
Connection time: 15 sec

CO2

10 MWh Battery Systems
18,9 km distance
12 min charging time
45 min crossing





FerryCHARGER

Denmark, Rødby-Puttgarden, MV FUTURA



tower-type Denmark	
Vessel	Newbuild, battery-electric, 147 m, 66 Freight units (1.200 m tracks), 140 PAX
Connection	Rødby-Puttgarden
Operator	Scandlines Integrator: NES
Scope	2 Landsides (Rødby) 1 Shipside
Operation Date	2024
Power	15 MW, High-Voltage 590 V, 1600 A
Contacting	Fully automated Connection time: 15 sec
CO2	Until 2030: 60% reduction compared to 2008 Until 2040: Zero-Emission company-wide



FerryCHARGER

Denmark, Rödby-Puttgarden, MV FUTURA



tower-type

Denmark

Vessel

Newbuild, battery-electric,
147 m, 66 Freight units
(1.200 m tracks), 140 PAX

Connection

Rödby-Puttgarden

Operator

Scandlines

Scope

2 Landsides (Rödby)
1 Shipside

**Operation
Date**

2024

Power

15 MW, High-Voltage

Contacting

Fully automated
Connection time: 15 sec

Notes

10 MWh Battery Systems
18,9 km distance
12 min charging time
45 min crossing



FerryCHARGER

bow-type







FerryCHARGER

RF Amherst Islander II, Millhaven-Stella, Canada (1/2)



bow-type		Canada	
Vessel		Amherst Islander II, 71x20 m RF 6819 E3 fully electric Ro/Pax 300/40	
Connection		Millhaven-Stella (Amherst Island, Lake Ontario)	
Operator		MTO Ministry of Transport Ontario	
Scope		2 Land sides, 2 Shipsides	
Operation Date		2021	
Power		3 MW, Low-Voltage 1000 VDC, 3000 A Battery Energy: 1900 kWh	
Contacting		Fully automated Connection time: 10 sec	
Notes		- Minimum footprint - Interchangeable between vessels different beam - CO2 emissions by as much as 7,000 tonnes / yr	





FerryCHARGER

RF Amherst Islander II, Millhaven-Stella, Canada (2/2)



bow-type		Canada	
Vessel		Amherst Islander II, 71x20 m RF 6819 E3 fully electric Ro/Pax 300/40	
Connection		Millhaven-Stella (Amherst Island, Lake Ontario)	
Operator		MTO Ministry of Transport Ontario	
Scope		2 Land sides, 2 Shipsides	
Operation Date		2021	
Power		3 MW, Low-Voltage 1000 VDC, 3000 A Battery Energy: 1900 kWh	
Contacting		Fully automated Connection time: 10 sec	
Notes		- Minimum footprint - Interchangeable between vessels different beam - CO2 emissions by as much as 7,000 tonnes/yr	



Stemmann-Technik FerryCHARGERS

- Fully automated connection under almost all-weather conditions day and night
- Automated emergency disconnection into the fail-safe position
- Very quick connection for maximum charging time / short vessel stopover
- Improved safety and procedures
- Optimized for use of the existing terminal infrastructure



BENEFITS



Short charging time with power up to 23MW



Increased safety with no operator through automation



Safe charging with automated movement and tidal compensation



Small footprint adaptable on shore and receptacle on board



Safe connection fully automated with safe fail retraction



Broadest global portfolio and unequaled expertise with largest installed base

FerryCHARGER is a fully automatic system for fast charging of vessels.

- High power up to 23MW
- High or low voltage and AC or DC charging power
- Safe fail retraction even under power loss condition
- Connection time below 10s
- Charging from top, side or stern/bow of the vessel
- Tidal flux compensation up to 8500mm
- Adaptation for country specific demands
- Unique high voltage solutions
- Largest global installed base backed by unequaled expertise

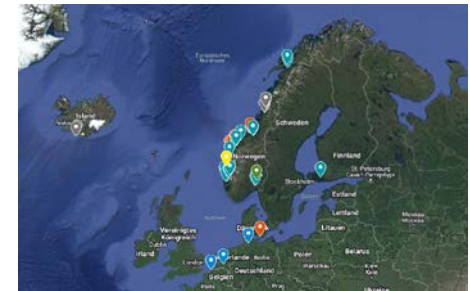


FerryCHARGER

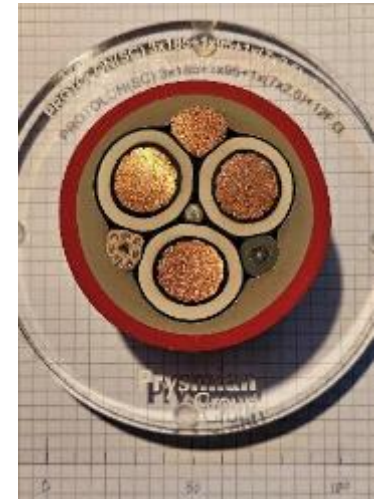
Facts as per January 2024

- Stemmann main player in the Marine since 2014 with NORLED (M/F Ampere)
- Sole supplier of medium-voltage FerryCHARGERS
- **FerryCHARGER:**
 - Total (shore sides): 65 installations
 - Total (ship side): 146 installations (35 low and 33 medium Voltage)
 - Panto-type: 9 installations with 11 pantos
 - Side-panto: 4 installations (3 side & 1 telescope)
 - Tower-type: 39 installations (25 MV & 14 LV), Generation 5, by 2023, 15MW / 15Kv solution for delivery 2023
 - Bow-type: 4 installations – LV (3 & 6 MW)
- **ShoreCONNECT Systems:**
 - 400 installations (280 low / 120 medium-voltage)

Check out our FerryCHARGER locations on Google Maps



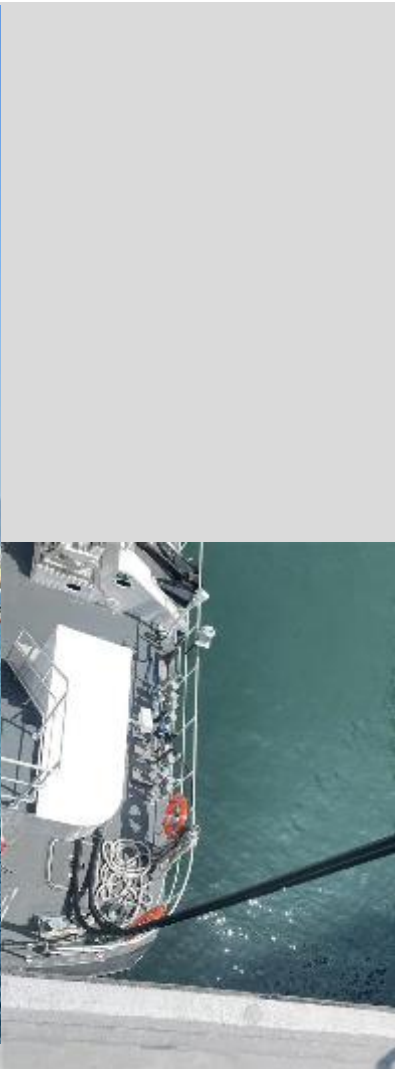
ShoreCONNECT





ShoreCONNECT

Hong Kong



588277	Hongkong
Application	Dual-Spiralic reel
Terminal	HungHom / North Point / Kwun Tong / Central ferry station
Operator	HongKong Siemens Energy Ltd.
Scope	4 units
Operation Date	2024 / 2025
Power	Low-Voltage 400 V, 550 kW
Contacting	Manual Connection
Notes	IEC 80005-3, ISO, IEEE



ShoreCONNECT

Hong Kong



588277	Hongkong
Application	Dual-Spiralic reel
Terminal	HungHom / North Point / Kwun Tong / Central ferry station
Operator	HongKong Siemens Energy Ltd.
Scope	4 units
Operation Date	2024 / 2025
Power	Low-Voltage 400 V, 550 kW
Contacting	Manual Connection
Notes	IEC 80005-3, ISO, IEEE

ShoreCONNECT

Container-solution



6120116	Everhonest
Application	Dual-Spirallic reel
Shipping company	Maersk Ship Line
Operator	Maersk Ship Line
Scope	75 units
Operation Date	2024
Power	6.6KV
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE

ShoreCONNECT

Container-solution



433474

Germany

Application Containerized Cable-Reel

Terminal World-wide

Operator Diverse (i.e. Maersk, MSC, CMA-CGM, Hamburg Süd, Hapag-Lloyd, Hanjin)

Scope More than 100 ship sides

Operation Date Since 2012

Power High-Voltage
6.6 kV, 700 A

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE

CO2 CO2 Saving 73 ton per hr
1770 to per day

ShoreCONNECT

Barcelona, BEST-Terminal





ShoreCONNECT

Barcelona, BEST-Terminal



	Spain
Application	Movable Socket
Terminal	Barcelona BEST
Operator	Hutchinson Ports
Scope	1 System, 16 MVA, 50 m
Operation Date	2023
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	Target is to reduce 80% of Scope 1 & 2 emissions by 2030 and to be net-zero by 2040. See here for further information



ShoreCONNECT

Barcelona, BEST-Terminal



	Spain
Application	Movable Socket
Terminal	Barcelona BEST
Operator	Hutchinson Ports
Scope	1 System, 16 MVA, 50 m
Operation Date	2023
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	Target is to reduce 80% of Scope 1 & 2 emissions by 2030 and to be net-zero by 2040. See here for further information





ShoreCONNECT

Kiel, Germany (1/4)



545891	Germany
Application	SC-vehicle for cruise liners
Terminal	Kiel Cruise Terminal
Operator	Port of Kiel
Scope	1 Mobile System 6 Junction Boxes
Operation Date	2021
Power	High-Voltage 6.6/11 kV, 16MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE, 35m cable reel, daisy-chain solution
CO2	CO2 Saving 30 ton per hr 240 to per day

ShoreCONNECT

Kiel, Germany (2/4)



545891

Germany

Application SC-vehicle for cruise liners

Terminal Kiel Cruise Terminal

Operator Port of Kiel

Scope 1 Mobile System
6 Junction Boxes

Operation Date 2021

Power High-Voltage
6.6/11 kV, 16MVA

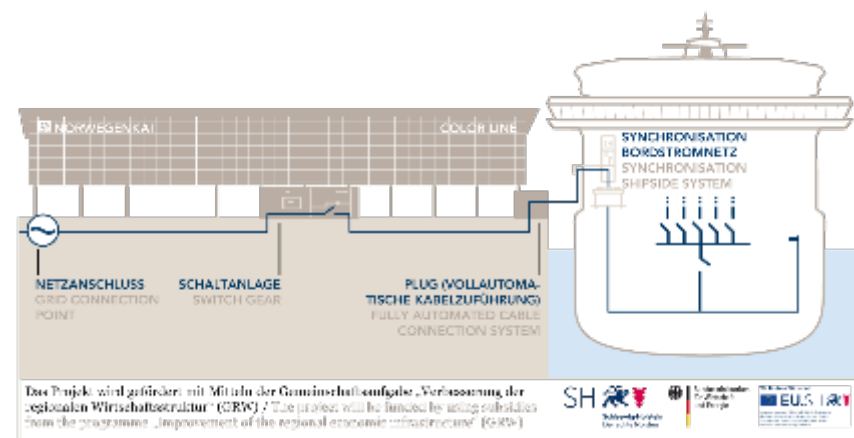
Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE,
35m cable reel, daisy-chain
solution

CO2 CO2 Saving 30 ton per hr
240 to per day

ShoreCONNECT

Kiel, Germany (3/4)



545891

Germany

Application SC-vehicle for cruise liners

Terminal Kiel Cruise Terminal

Operator Port of Kiel

Scope 1 Mobile System
6 Junction Boxes

Operation Date 2021

Power High-Voltage
6.6/11 kV, 16MVA

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE,
35m cable reel, daisy-chain
solution

CO2 CO2 Saving 30 ton per hr
240 to per day



ShoreCONNECT

Kiel, Germany (4/4)



545891	Germany
Application	SC-vehicle for cruise liners
Terminal	Kiel Cruise Terminal
Operator	Port of Kiel
Scope	1 Mobile System 6 Junction Boxes
Operation Date	2021
Power	High-Voltage 6.6/11 kV, 16MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE, 35m cable reel, daisy-chain solution
CO2	CO2 Saving 30 ton per hr 240 to per day



ShoreCONNECT

Hamburg-Altona, Germany (1/3)



371777	Germany
--------	---------

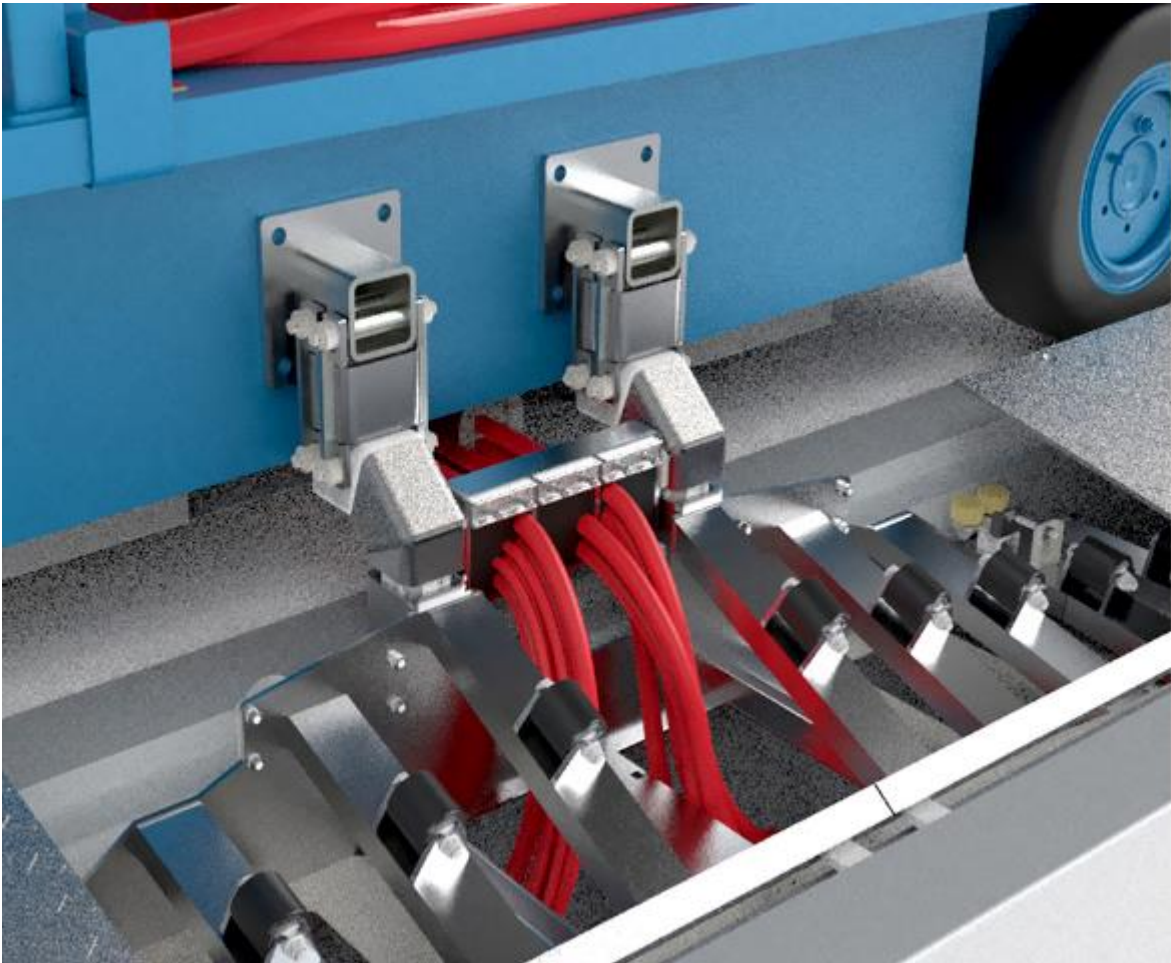
Application	SC-vehicle for cruise liners
Terminal	Hamburg-Altona Cruise
Operator	Hamburg Port Authority HPA
Scope	1 Mobile System Underground energy chain
Operation Date	2014
Power	High-Voltage 6.6/11 kV
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE Fully covered cable canal Remote control
CO2	CO2 Saving 30 ton per hr 240 to per day





ShoreCONNECT

Hamburg-Altona, Germany (2/3)



371777	Germany
Application	SC-vehicle for cruise liners
Terminal	Hamburg-Altona Cruise
Operator	Hamburg Port Authority HPA
Scope	1 Mobile System Underground energy chain
Operation Date	2014
Power	High-Voltage 6.6/11 kV
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE Fully covered cable canal Remote control
CO2	CO2 Saving 30 ton per hr 240 to per day



ShoreCONNECT

Hamburg-Altona, Germany (2/3)



371777

Germany

Application SC-vehicle for cruise liners

Terminal Hamburg-Altona Cruise

Operator Hamburg Port Authority
HPA

Scope 1 Mobile System
Underground energy chain

Operation Date 2014

Power High-Voltage
6.6/11 kV

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE
Fully covered cable canal
Remote control

CO2 CO2-saving 30 ton/hr
240 to/day



ShoreCONNECT

Hamburg-Altona, Germany (2/3)



371777

Germany

Application

SC-vehicle for cruise liners

Terminal

Hamburg-Altona Cruise

Operator

Hamburg Port Authority
HPA

Scope

1 Mobile System
Underground energy chain

Operation
Date

2014

Power

High-Voltage
6.6/11 kV

Contacting

Manual Connection

Notes

IEC 80005-1, ISO, IEEE
Fully covered cable canal
Remote control

CO2

CO2 Saving 30 ton per hr
240 to per day



ShoreCONNECT

Hamburg-Altona, Germany (3/3)



371777

Germany

Application SC-vehicle for cruise liners

Terminal Hamburg-Altona Cruise

Operator Hamburg Port Authority
HPA

Scope 1 Mobile System
Underground energy chain

**Operation
Date** 2014

Power High-Voltage
6.6/11 kV

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE
Fully covered cable canal
Remote control

CO2 CO2 Saving 30 ton per hr
240 to per day





ShoreCONNECT

Tianjin, China (1/2)



521449	China
Application	SC-vehicle for cruise liners
Terminal	Tianjin Cruise Terminal
Operator	Port of Tianjin
Scope	1 Mobile System
Operation Date	2019
Power	High-Voltage 6.6/11 kV, 20MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE, 35m cable reel, daisy-chain solution



ShoreCONNECT

Tianjin, China (2/2)



521449	China
Application	SC-vehicle for cruise liners
Terminal	Tianjin Cruise Terminal
Operator	Port of Tianjin
Scope	1 Mobile System
Operation Date	2019
Power	High-Voltage 6.6/11 kV, 20MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE, 35m cable reel, daisy-chain solution

ShoreCONNECT

Rostock-Warnemünde, Germany (1/4)



547286

Germany

Application SC-vehicle for cruise liners

Terminal Rostock-Warnemünde

Operator Port of Rostock

Scope 2 Systems, 16 MVA each
4 Junction Boxes, 20 MVA

Operation Date 2020

Power High-Voltage
6.6 / 11 kV / 16 MVA

Contacting Manual Connection

Notes

- 35m cable reel, daisy-chain junction solution
- 2,6 tons of CO2 saved per hour

ShoreCONNECT

Rostock-Warnemünde, Germany (2/4)



547286

Germany

Application SC-vehicle for cruise liners

Terminal Rostock-Warnemünde

Operator Port of Rostock

Scope 2 Systems, 16 MVA each
4 Junction Boxes, 20 MVA

Operation Date 2020

Power High-Voltage
6.6 / 11 kV / 16 MVA

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE
35m cable reel, daisy-chain
junction solution

ShoreCONNECT

Rostock-Warnemünde, Germany (3/4)



547286

Germany

Application SC-vehicle for cruise liners

Terminal Rostock-Warnemünde

Operator Port of Rostock

Scope 2 Systems, 16 MVA each
4 Junction Boxes, 20 MVA

Operation Date 2020

Power High-Voltage
6.6 / 11 kV / 16 MVA

Contacting Manual Connection

Notes IEC 80005-1, ISO, IEEE
35m cable reel, daisy-chain
junction solution



ShoreCONNECT

Rostock-Warnemünde, Germany (4/4)



547286

Germany

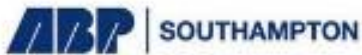
Application	SC-vehicle for cruise liners
Terminal	Rostock-Warnemünde
Operator	Port of Rostock
Scope	2 Systems, 16 MVA each 4 Junction Boxes, 20 MVA
Operation Date	2020
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE 35m cable reel, daisy-chain junction solution





ShoreCONNECT

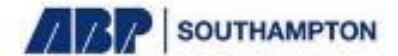
Southampton, United Kingdom (1/3)



	United Kindom
Application	SC-vehicle for cruise liners
Terminal	Southampton
Operator	Port of Southampton
Scope	1 System, 16 MVA each 10 Junction Boxes Daisy-Chain
Operation Date	2021
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE 50m cable reel, daisy-chain junction solution

ShoreCONNECT

Southampton, United Kingdom (2/3)

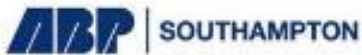


	United Kindom
Application	SC-vehicle for cruise liners
Terminal	Southampton
Operator	Port of Southampton
Scope	1 System, 16 MVA each 10 Junction Boxes Daisy-Chain
Operation Date	2021
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE 50m cable reel, daisy-chain junction solution



ShoreCONNECT

Southampton, United Kingdom (3/3)



	United Kindom
Application	SC-vehicle for cruise liners
Terminal	Southampton
Operator	Port of Southampton
Scope	1 System, 16 MVA each 10 Junction Boxes Daisy-Chain
Operation Date	2021
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE 50m cable reel, daisy-chain junction solution



ShoreCONNECT

Amsterdam, The Netherlands



	The Netherlands
Application	SC-vehicle for cruise liners
Terminal	Amsterdam
Operator	Amsterdam Cruise Terminal
Scope	1 System, 16 MVA Power Supply by Energy-Chain
Operation Date	2024
Power	High-Voltage 6.6 / 11 kV / 16 MVA
Contacting	Manual Connection
Notes	IEC 80005-1, ISO, IEEE Fully covered cable canal Remote control – 275m Automatic tidal adjustment





Benefits of ShoreCONNECT

- 'Quick-fix' to help port and terminal operators reduce GHG emissions
- Use of proven, modular components for cost effective solutions
- Engineering, production, aftersales-service tailored to individual needs
- Interoperational
- Experience based on large installed base
- Fully meeting IEC requirements