

# Ports and Maritime Electrification

Sustainable solutions for Ships and Ports

- 
- FerryCHARGER
  - ShoreCONNECT
  - CableREELS



## About us

Electrify your port's ecosystem with Stemmann-Technik technologies.

### Excellence in design and delivery around the world

STEMMANN-TECHNIK is one of the world's leading manufacturers of power and data transfer components and systems in industrial and transport technology. Since 2014 we belong to the Wabtec Corporation, a global provider of technologies, products and services in the field of railway and industrial engineering.

Drawing on our 100 years of engineering and practical research, we manufacture high quality products required all over the world, and create special, innovative, customised solutions. A fundamental key to our success is our understanding of the importance of high quality in all areas of the company. From customer oriented advice to long-term service. Our products and services meets customers' requests, needs and expectations.

Every project and application is designed in fine detail, taking into account performance-related and economic aspects. We guarantee high quality by upholding international standards and guidelines.



# Stemmann-Technik

A **Wabtec** Company

## Ports & Maritime

### Leading sustainability efforts for Ports and Maritime industry

Since the dawn of recorded history, ports and maritime activities have been key to the development of commerce, prosperity and sustainability.

STEMMANN-TECHNIK has been serving this industry with superior products and technology for decades. Whether by providing on-shore power to container ships, ferries and cruise liners or cable reels for port cranes, we have always actively supported our customers in enhancing not just their efficiency, but also their sustainability

Whenever you need a trusted partner for your project STEMMANN-TECHNIK is ready to support you. Wherever you are and whatever your challenges.



# Products

Innovating with purpose. Building a more sustainable future.



## Market leading solutions tailor made for individual requirements at quay and on-board

To meet the ever-growing demands of the industry all our products are continuously improved with most innovative technologies. We design solutions with highest focus on increased safety, ease of use, reduced cost of ownership. The widest portfolio of solutions will surely fulfil demands for highest performance factors. Increased productivity with fast turnaround time, high power transfer and perfectly controlled automation. Improved efficiency with minimal impact on your current space, state-of-an-art ergonomic design, reduced effort and resources need to operate our equipment. Large installed base is allowing us to propose best solution to your individual needs and existing infrastructure, which reduces your capital expenditures. For all our solutions we keep highest safety and quality standard, so you can focus to increase your revenue with safe and long-lasting equipment.

### FerryCHARGER

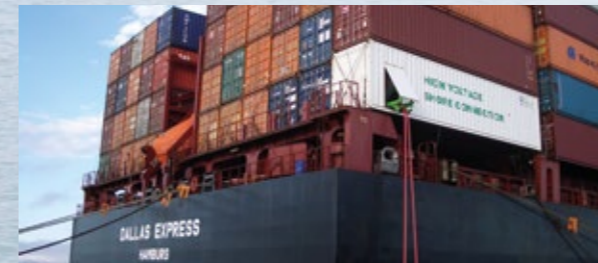
Market leading and fastest vessel charging. Solutions adaptable to ship and land side.



Picture: Baltic Workboats AS

### ShoreCONNECT

To meet your individual infrastructure requirements. For all vessel sizes to reduce emissions such as exhaust, vibration and noise.



### CableREELS with Active Acceleration Control

Increased productivity and availability enabled by intelligent and adaptive control systems.





# FerryCHARGER

Reliable solutions to electrify your crossing.



## Shortest charging time for sustainable fleets – Solutions adaptable to ship and land side

For every vessel which needs to be in service with 100% reliability, charged fast, when space on ship and land is limited. Where connection time is critical regardless of tidal flux and weather, Wabtec solutions with Stemmann-Technik technology is the answer. We are the market leader in high and low voltage applications, experienced manufacturer that provides dependable high-power charging.



### Short time charging

With power up to 23MW



### Fully automated fast connection and charging

Connection time below 10s



### Automated movement compensation

Safe charging during tidal flux



### Increased safety

No operator needed with fully automated connection



### Small footprint

Adaptable on shore and receptacle



### Broadest portfolio

Know-how with largest installed base worldwide

Duty cycle up to 100%*	PANTO type top / side	TOWER type	BOW type
Rated voltage	Up to 1000 V AC and 1500 V DC	Up to 1000 V DC and AC Up to 15 kV AC	Up to 1000 V AC and DC Up to 15 kV AC
Nominal current	Up to 1500 A	Up to 3kA at 1kV Up to 900A at 15kV	Up to 5kA DC and 3kA AC at 1kV. Up to 600A at 15 kV
Max Power	2,5 MW at 1kV AC (3ph) 2,2 MW at 1,5kV DC	5MW at 1kV; 23MW at 15kV	5 MW at 1kV 15 MW at 15kV
Connection time	<10s	<10s	<15s
Set-up land	Panto from top/side, telescopic from side	Arm in tower	Arm beside ramp
Set-up ship	Contact bars on roof /side	Enclosed socket (receptacle)	Enclosed socket (receptacle)
Connection	Automated, berth at specific location	Automated, socket detection, only side	Automated, socket detection, front/rear
Vertical (tidal) compensation	1 200mm / or Length of contact bars at Vessel	5 000 mm	8 500 mm
Horiz. lateral compensation	± 310mm / or width of carbon brushes at Panto	± 300 mm	±1 500 mm depends on configuration
Horiz. longitud. compensation	± 280mm / 1 450 mm	1 600 mm	±1 500 mm depends on configuration
Main benefits	Simple, effective for short distances, compact size.	Short charging time. High voltage option. Good berthing tolerances	Small footprint on ramp, compact size, largest movement compensation

\*Duty Cycle 100% according to DNVGL-RU-SHIP-Pt4Ch8Se2





# ShoreCONNECT

Versatile offshore power supply solutions.



www.shoreconnect.com

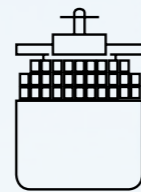
## Global Shore Power

We help reduce the carbon footprint of all vessels and their respective power demands worldwide. With more than 80 years of experience in the ports and maritime sector, STEMMANN-TECHNIK is uniquely positioned to provide superior energy and data transfer solutions to ports, terminal operators and ship owners on a global scale.

With broadest range of delivered projects in our industry, we are the supplier of choice and according to IEC 80005.

### Cable Reel for Container Vessels

On-board system for high- or low voltage



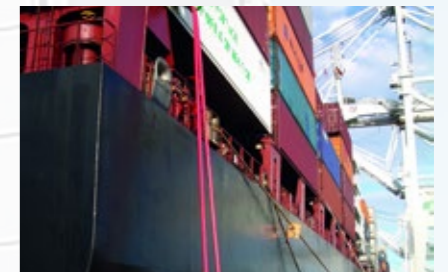
Container Vessels



Cable Reel  
Mobile Socket

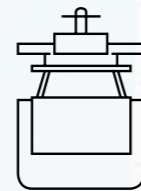
#### Reduction of more than 100 tons of CO<sub>2</sub> while at berth

- Safe and swift handling by means of telescopic roller track
- Fully automated tidal range compensation
- Power transfer up to 7,5 MVA, up to 6.6kV, 50/60Hz
- Adaption to any port situation world-wide
- Individual cable handling



### Cable Crane

Solution for high- or low voltage



Ferry



Cable Crane

#### Fully operational under all weather conditions and grease

- Solution for low and high voltage
- Anti-glide cable unique system
- Operation by single operator
- Safe and swift handling by means of arm
- Fully automated tidal range compensation
- Power transfer up to 6,5 MVA, up to 11kV, 50/60Hz
- Individual cable handling



### Mobile Carrier System

Self-propelled and towed version



Cruiser Liner



Mobile Carrier System

#### Only one person to operate the vehicle

- Fast vehicle handling by single operator
- Zero emission propulsion
- Safe and swift handling by means of telescopic arm above and below quay level
- Fully automated tidal range compensation
- Power transfer up to 20 MVA at 6.6kV/11 kV, 50/60Hz



### Cable Reel on top of quay

Low- and high voltage power supply under toughest conditions



Offshore Vessels,  
RoRo



Cable Reel

#### Engineered for maximum cable lifetime

- Individual cable handling
- Power transfer up to 11 kV, 50/60Hz
- Usually mono- up to triple-spiral reels available
- ATEX versions available on request
- Movable and fixed version
- Flexible cable output up 45°





# CableREELS

Motor-driven cable reels with Active Acceleration Control.



www.wabtec-cable-reel.com

## CableREELS with Active Acceleration Control

Motor- and spring-driven cable reels are designed for the power supply to movable machines. The motor- and spring-driven cable reels are manufactured in accordance with the travel distances and the power of the movable machines. Regarding the version of the cable reel it is differentiated between cylindrical and spiral version. Which one of these versions is chosen depends on the customer's resp. design-requirements.

Special designs and the required accessories are innovatively produced by Stemmann-Technik corresponding to the customer's requirements.

### Operator's benefits with our technology



#### Safety and security

Active Acceleration Control, cybersecurity



#### Connectivity

Reliable data transfer, remote access, cybersecurity



#### Retrofitting

high flexibility, higher speeds and accelerations



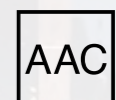
#### Increased productivity

higher accelerations and speeds up to 310 m/min



#### OPEX

increased availability by reduced wear and tear, longer lifetime



#### Stepless torque transmission

Enables fastest operation in the industry

### Power Cable Reels

Exemplary technical data for STS cranes:

- Power supply via low / medium voltage
- Combination additional optic fibres for data transmission possible
- Cable lengths up to 650 m
- Cable cross sections 16 mm<sup>2</sup> to 185 mm<sup>2</sup>
- Reel diameters up to 8 m
- Travel speed 80 m/min or more if required
- Mounting heights within the crane system up to 25 m
- Drive technology DTM (direct torque motor) / FCM (frequency controlled motor)

Long life time for cable with unique Active Acceleration Control

### Spreader Cable Reels

Technical specification:

- Power supply via low voltage
- Combination additional optic fibres for data transmission possible
- Cable lengths up to 80 m
- Cables up to 56 x 2.5 mm<sup>2</sup>
- Reel diameters up to 2.8 m
- Travel speed up to 180 m/min
- Drive technology FCM (frequency controlled motor)

Reliability of data transfer with distinctive fibreoptic connection

### Electrification of rubber-tyred gantry cranes (RTGs) by means of motor cable reels

The advantages of the retrofitting are

- Enormous reduction of the amount of diesel-fuel needed.
- Contrary to the permanently operated diesel-motor, only the actually required amount of energy is used with the external energy supply.
- Reduction of time and costs due to the longer maintenance intervals then the diesel-electric-drive.
- Reduction of costs and work by reduction of the stops or refuelling.
- Significantly less emissions by the lesser use of the combustion engine and thus better environmental conditions at the site.

Safer for people with reduced carcinogenic








Interested? Find out more on [www.stemmann.com](http://www.stemmann.com)

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