

# Crane Control and Automation Systems

## A Global Leader in Automation Systems, Power Electronics and Rotating Machinery

TMEIC manufactures and sells variable frequency drives, motors, photovoltaic inverters and advanced automation systems for a range of industrial applications. Our North American headquarters in Roanoke, Virginia, designs, develops and engineers advanced automation systems, specializing in Port Cranes, Renewable Energy, Metals, Oil & Gas, Mining, Testing and other industrial markets worldwide.

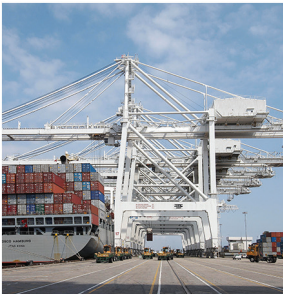
**TMEIC as been the driving force in crane control and automation systems for more than 60 years.** Engineered with an unwavering focus on reliability, safety, and efficiency, TMEIC has a well-deserved reputation as a world leader in the crane industry. TMEIC Industrial Systems engineers are committed to the development of cutting-edge technology to improve reliability, gain efficiencies, and improve safety.



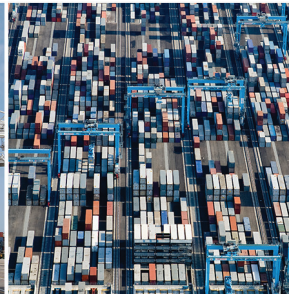
TMEIC Corporation, Roanoke, Virginia  
Headquarters and Engineering Center  
Over 300 employees

## Crane System Applications

TMEIC offers control and automation systems for a wide variety of port applications, including ship-to-shore cranes, container cranes, gantry cranes, and bucket and continuous ship unloaders.



Quay Cranes



Automatic Stacking  
Cranes (ASCs)



Rail Mounted Gantry  
Cranes (RMGs)



Rubber Tire Gantry  
Cranes (RTGs)



Ship Unloaders

## Crane Automation Systems

TMEIC offers several scalable crane automation solutions from semi-automatic with manual assistance up to fully-automatic, unmanned operations. When equipped with our latest vision systems and auto-positioning subsystems, our partners reduce operational costs by assuring consistent operation, the highest levels of efficiency, increased safety and operator comfort.

### Automatic Stacking Cranes (ASCs)

Our Maxview® systems provide the measurements required for container travelling or landing during full automatic crane operation.

### Landside Transfer Zone Automation

A fully automated landside transfer zone increases terminal throughput while reducing carbon footprint.

### Remote Quay Crane Operation

Remote operator station displays in the yard office stream live video showing the crane pick up area and the top of containers. Operators maintain control of the crane as if they were still in the cab on the crane.

### Smart Landing Systems

The Maxview® Vision System is a set of engineered solutions that allow automatic operation of the yard at a higher rate, often setting production records.

# Crane Control and Automation Systems

## Maxspeed® Crane Controller & Maxview® Laser-Based Systems

The Maxspeed® Crane Controller uses a master controller to coordinate all the networked power drives and to communicate with the operator interfaces, input/output devices, and the yard management system.

The Maxview® Vision System is a set of engineering solutions that allow automatic operation of the yard at a higher rate, often setting production records.

### Maxview Automatic Landing™ System

Provides simultaneous measurement of the landing target and spreader during container pickup and drop-off so the load can be positioned directly over the landing target.

### Maxview Smart Move™ System

Tailored for RTG and RMG cranes, it provides trolley slowdown and stop inputs to the crane control system to help prevent spreader collisions and stack topples.

### Maxview Clear Path® System

Provides collision and area protection for both dockside and yard cranes.

### Maxview Gate Monitor™ System

Provides a continuous view of the lanes at your truck gates, 24 hours per day, 7 days per week.

### Maxview Chassis Guidance™ System

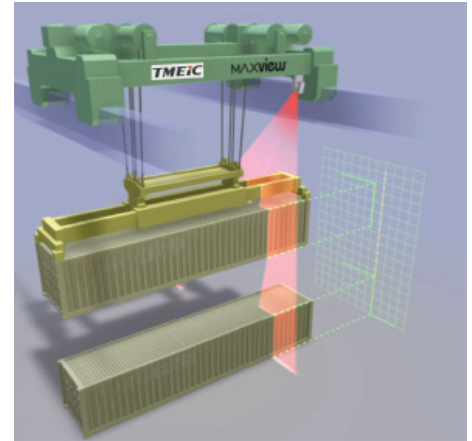
Cuts cycle times and increases productivity by guiding the truck driver into the exact target position under the container-handling crane for a quick container transfer.

### The Maxview Smart Landing® System

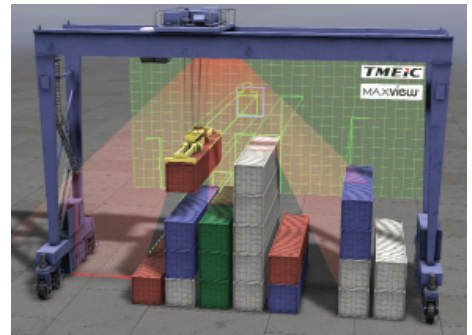
A laser-based ship profile and operator landing assist system that increases ship-to-shore crane productivity.

### Maxview4D™ Landside Transfer Zone

Provides fully autonomous landing on any top-loaded container handling equipment, including road chassis.



Maxview Sensors detect container ends and sides



Maxview sensors position the load directly over the landing target.

## Crane Modernization

Ports face many challenges to maintain competitive advantage in today's shipping environment. Modernizing terminal infrastructure to maintain a competitive edge requires significant investment.

### TMdrive-10e2 DP Drive Application

Replacing DC Drives and Motors with AC can cost hundreds of thousands of dollars causing smaller operations to choose not to upgrade or simply not to justify the investment. Tailored for RTG and RMG cranes, The TMdrive®-10e2-DP is intended for use in crane modernization projects where the existing DC motors will be retained. It has the advantage of common hardware for both the AC and DC motors and an easy upgrade from DC to AC at a future date if desired.

### Hoist Upgrades

The upgrade of existing obsolete drives and motors to state-of-the-art power control and precision motor operation allow for renewed life, smoother operation, and improved performance in aging ship to shore cranes.



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