# Docking and mooring


Powered By SmartPort

**As our industry faces the challenges of globalization and increasing scale and utilization of vessels, we must continuously look for ways to improve efficiencies. Shipping companies and port operators must look for smarter ways to deliver against increasing expectations.**

SmartPort by Trelleborg powers the critical interface between ship and port, on land and at sea. Building on Trelleborg's history of engineering ingenuity and deep sector knowledge, with a keen eye on data capture and management and technology-driven insight, SmartPort can increase efficiencies, improve safety and improve ROI for ports and vessels alike.

SmartPort provides a standardized way to collect and store vessel, port and terminal data. It's an open technology platform that connects port operations, allowing users to analyze asset performance and apply data insights, to improve day to day decision making and long term operational efficiency.

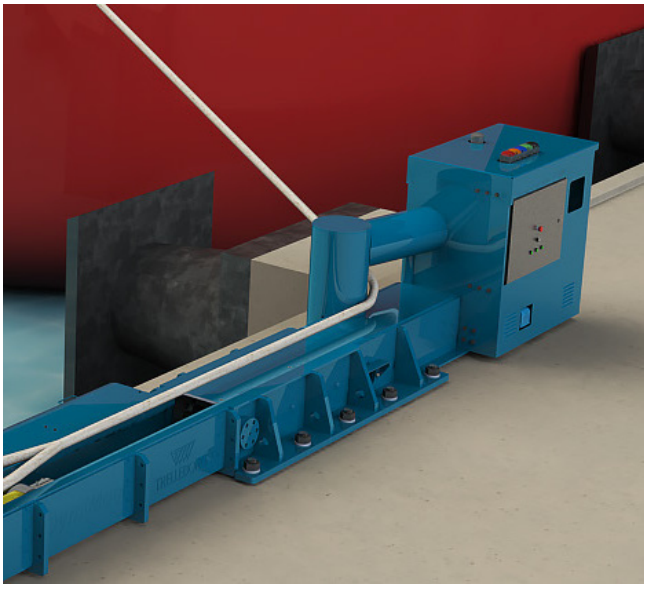
## SMARTPORT PRODUCTS

The marine industry is in a time of transition and change, and in an increasingly demanding environment, our sector must constantly adapt and innovate to ensure efficient, safe solutions. Docking and mooring has a critical role to play in optimizing the efficiency of both the berth and the overall port facility. Process refinement is key. That's why, at Trelleborg, we have rethought our approach and adopted a new philosophy we call lean mooring.

Lean mooring aims to transform berthing strategies and deliver superior efficiency in operations. This approach enables greater control of the operational window, optimizes berth utilization, lowers resource and space requirements and demands less time and infrastructure investment to increase berthing capacity. And crucially, it creates a safer working environment in even the most challenging conditions.

Smart solutions play a huge role in docking and mooring in ensuring accurate, instant and consistent data sharing between all involved parties.

SmartPort by Trelleborg is a technology platform that connects disparate, data-driven assets, giving stakeholders a holistic view of operators to power communications and decision making.



## AUTOMATED MOORING SYSTEMS

Many ports and terminals are looking towards automated technologies to compete effectively in today's complex, global landscape. The benefits of terminal automation lie in increased reliability, safety and efficiency both in scheduling and throughput.

Trelleborg's AutoMoor is a rope-free automated mooring system designed to make berthing operations smarter, safer and more competitive. Combining new vacuum pad and passive damping technology to rapidly attach to and secure a vessel at berth, the units are suitable for a range of environmental and berthing conditions.

As vessels become larger and working environments and operations become more demanding, our industry must step up to the challenge. DynaMoor combines Trelleborg's class leading Quick Release Hooks (QRH) with an innovative constant tensioning system. It actively dampens vessel motion, increasing the range of environmental conditions in which cargo can be transferred, and enhances safety by reducing the risk of parted lines and minimizing 'snap back zones'.

## LOAD MONITORING SYSTEMS

Trelleborg's load monitoring system contributes to industry best practice for safe mooring by providing real-time mooring line tension and alarm warning. Port owners and operators can leverage this information to analyze asset performance and ultimately enhance operations.

This technology can be found in certain products in the SmartPort range such as SmartBollard or SmartHook.

The SmartHook system measures and displays critical mooring line tensions to notify operators when ideal load limits are exceeded. The system consists of a load cell installed in the QRH pivot, a local controller mounted on the QRH base, monitoring software and an optional light and siren stand.

## DOCKING AID SYSTEMS

Guiding vessels into port safely and efficiently is a critical part of operating a successful port facility, which is why Trelleborg provides both laser and GPS solutions to assist in vessel approach and docking management.

Trelleborg's SmartDock range of docking aid systems monitors vessel speed, distance and angle during approach, drift and departure, and provides multiple display options to communicate vital information to pilot and terminal operators. Various standard and customized designs are available to meet the widest range of berthing situations.

## ENVIRONMENTAL MONITORING SYSTEMS

Accurate real-time environmental and MetOcean monitoring is vital to ensuring safe docking and mooring of vessels. Terminals must operate within set limits for MetOcean conditions to ensure the safety of vessels - and the terminal itself - and to maximize the service life of fender and jetty assets. With real-time MetOcean data and trends, operators can also maximize their berths' operating window.

Trelleborg's Meteorological Monitoring and Oceanographic Monitoring systems include sensors from leading instrument manufacturers and provide accurate measurement of local site conditions. These systems are rugged, reliable and maintainable – and are built to withstand the harsh conditions of the marine environment – and can be integrated into Docking & Mooring systems.

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SmartPort by Trelleborg powers the critical interface between ship and port, on land and at sea. Visit our website to access our case studies and white paper, plus the entire suite of SmartPort solutions.

SmartPort

**Learn more about SmartPort solutions**

### GET IN TOUCH:

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