

## LOAD PIN INTEGRATION IN QUICK-RELEASE MOORING HOOK

### Client's Background:

A leading Indian manufacturer specialising in marine rubber and offshore engineering products. One of their key offerings includes **Quick-Release Mooring Hooks (QRMHs)** used in port and offshore mooring operations.



Fig. 1 – QRMH system with integrated ATEX-certified Load Pin



Fig. 2 – Multiple QRMH systems with Load Pin integration

### Application Overview:

Mooring operations demand both safety and efficiency. QRMHs are designed to secure vessels and enable quick, controlled release during emergencies.

However, without real-time load monitoring, operators face challenges such as:

- Risk of overloading and line snap-back accidents
- Lack of preventive maintenance
- Reduced equipment lifespan due to undetected fatigue

The customer wanted to integrate a Load Pin solution to enable real-time tension monitoring, predictive maintenance, and enhanced operational safety.

### Main Objectives of Load Pin in QRMH:

- Continuously monitor mooring line loads.
- Prevent overload and unsafe release conditions.
- Improve crew safety by providing alarms and data-driven decision support.
- Extend equipment life through fatigue monitoring and predictive maintenance.

*This case study serves only as guidance and not as a contractual specification. The individual product specifications should be taken from the relevant product data sheets and the standards, to which reference has been made in this technical note. Thames Side Sensors reserves the right to amend this case study at any time without prior notice.*

## Client's Challenges:

- Difficulty sourcing **ATEX-certified Load Pins** from India
- Dependence on imported Load Pins from Europe with no local **technical support**
- Need for **integration** with existing SCADA system
- Post-installation **accuracy issues** during field testing

## Thames Side Sensors solution:

Thames Side Sensors India provided:

- ATEX-certified Load Pins, customized to the customer's dimensional requirements
- Transmitters converting Load Pin signals into RS485 output for seamless SCADA integration
- Remote integration support and assistance with lead time management

When post-installation accuracy issues were observed, Thames Side Sensors:

- Conducted an application study at the customer's testing facility
- Noted variations in the current hydraulic testing machine configuration, which were affecting the accuracy of the load measurement
- Recommended and carried out the necessary adjustments

After calibration and validation, the system achieved accurate and reliable load readings.

## Results / Benefits:

Parameters	Before Load Pin Integration	After Load pin Integration
Overload Protection	Not Available	Real-time alarm at set limit
Maintenance Downtime	Reactive (post-failure)	Predictive (based on load history)
Data Availability	None	Continuous load history logging
Operations	Operator judgment only	Automated and Data Driven

The integration resulted in a safer, smarter, and more reliable mooring operation. The customer achieved:

- Enhanced crew safety through real-time overload alarms
- Reduced downtime via predictive maintenance
- Extended equipment lifespan
- Local technical support and faster response times

The customer expressed high satisfaction with Thames Side Sensors' responsive support and engineering expertise.

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