



A HYBRID SYSTEM DEVELOPED BY METRICA S.A.

FLOATING DOCK DEFLECTION MONITORING SYSTEM

Combining over 20 years of technological experience in large metrology applications on ship and marine infrastructures, environmental sensor installations, and many customers worldwide, Metrica S.A. has developed a customized and innovative solution for deflection monitoring during critical docking procedures.

Deflection Monitoring System (DMS) is a novel digital system that monitors deflections on marine constructions and floating docks in real-time. Metrica S.A. developed the system, which conforms to the rules and classification standards for digital deflection monitoring. DMS is a measurement decision support system that prevents the exceedance of defined maximum deflection thresholds, maintaining and prolonging the structural integrity of marine constructions.



Benefits

- Digital monitor of deflection and torsion deformations in real-time
- Ensuring procedures and equipment safety
- Customization of solutions according to the specific needs of each infrastructure and user
- User-defined number of sensors depending on the particular needs for recording, focusing and perception of procedures
- High accuracy provided at measuring positions (up to ± 0.05 % FS)
- Support dry-docking procedures and decision-making
- Centralized operation and scalable architecture
- There is no requirement for line-of-sight and man-in-the-loop procedures
- No influence by weather conditions
- Ability to integrate with other sensors (e.g. meteorological) via the central data logging system
- There is a slight learning curve, and user-friendly software environment and functionalities
- Situational awareness through graphic and audible warnings when limits are exceeded
- Easy maintenance and continuous monitoring of the "health" status of the system and its infrastructure



Dock Deflection Information

- Bending Deflections (Hogging/Sagging)
- Torsional Deformations*
- Trim and List*
- Deflection trends
- Graphical & Numerical Representations
- Graphical and Audible Warnings
- Critical limits and thresholds definition
- Measurement history in universal compatible formats (.xls, .csv)
- Definition of user groups and levels of authorization
- System and docking parameterization.

*According to the selected number of sensors

The system

Intelligent System Architecture

Based on simple hydraulic principles, a network of pressure level sensors monitors and transmits in real-time the deflection variations experienced by the structure in all phases of a docking cycle.

Accurate and Reliable Sensors

Powered by OTT Hydromet GmbH, each pressure level sensor (OTT PLS) precisely measures the water level. The pressure probe uses hydrostatic pressure through an integrated controller and ceramic pressure-measuring cell. The sensors compensate for atmospheric air pressure level fluctuations and provide millimetre accuracy.

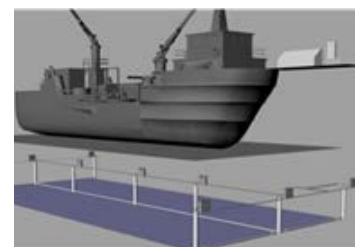
Central Data Collection & Distribution

The core of the system is a central datalogger (OTT netDL) that collects, stores, and processes data from sensors in the specified time period.

Deflection Monitoring Software

Through a user-friendly software interface installed on a laptop in the control room of the floating dock, the end user can:

- be informed of the current deflection and inclination status of the floating dock
- examine records of archived sensor values and docking procedures
- define warning levels and thresholds
- receive information on the operational status of the system



About METRICA S.A.

METRICA S.A. is based on the knowledge and technical expertise of its personnel, that has been in the field for more than 20 years. From best-in-class surveying & environmental instruments to the broadest solution portfolio in the measurement world, METRICA S.A. is helping customers to understand, plan and implement solutions for simple, complex or unique applications related to Surveying, Heavy Industry, Shipping and the Environmental sector. We are involved in innovative projects in Greece, Cyprus and worldwide.