Moor Safe - Mooring Line Integrity Monitoring

Moor Safe is a versatile and innovative mooring lines monitoring system, which aims to make the operation of offshore platforms safer by providing accurate tilt and presence data of the mooring lines in real time. The solution is based on high-resolution digital triaxial inclinometers and enables the calculation of the angulation of each catenary, regardless of the mooring line configuration and anchoring depth.

The system developed by Holdstein Solutions uses a modular submarine system that can be quickly and easily installed by divers, even if the platform is in production. On the surface, Moor Safe has an industrial electronic module, that is resistant to environmental conditions and that provides communication with user-friendly interface software. The data transmission to the diagnostic computer can occur via satellite, radio or Ethernet network, depending on the type of platform where the system will be installed.

The monitoring software produces accurate, uninterrupted information about the mooring lines, making it possible to set up alarms, utilize of graphic resources and record the anchor lines' history. The system also detects mooring breakages, on the seabed or on the surface and has an alarm for sudden variations. In the event of change in anchor line behavior, the solution sends an instant alert, making the interaction between the tool and the user simple and clear.

Moor Safe's continuous monitoring enables safer operations and savings in terms of periodic ROV inspections. It also offers long-term benefits: the historical data accumulated can be used to study the vessel's behavior under different marine conditions, provide data for studies, and supply supporting information for future mooring projects.

Cutting-edge technology, combined with low installation and maintenance costs, makes Moor Safe the ideal solution for anchor monitoring.

Why should you consider Moor Safe?

- **Enhanced safety for offshore platform operations**, through precise, real-time detection of mooring line breakages and sudden variations.

- **Instant alarms and notifications**, enabling rapid responses to changes in mooring line behavior.

- **Continuous monitoring**, significantly reducing the frequency and costs associated with routine ROV inspections.

- **Flexible data transmission options (Satellite, Radio, Ethernet)**, adaptable to various platform configurations including Monobuoys, FPSOs, Semi-submersibles, and Taut-leg platforms.

- **Historical data accumulation**, allowing in-depth analysis of mooring line behavior over time, supporting future studies and designs.

- **Robust and environmentally resistant surface electronics**, suitable for challenging offshore conditions.

- **User-friendly software interface**, simplifying data interpretation, alarm management, and decision-making.

- **Easy installation and low maintenance**, with a modular underwater design that enables quick setup by divers without interrupting ongoing platform operations.

- **State-of-the-art technology at a competitive cost**, providing significant value and operational efficiency.

Exploring Continuous Mooring Line Monitoring in Different Offshore Platforms with Moor Safe

MONOBUOYS	FPSOs WITH TURRET	SEMI-SUBMERSIBLES	FPSO WITH TAUT-LEG

In **monobuoy** applications, MoorSafe transmits inclinometer data to the diagnostic computer via satellite, ensuring reliable communication even at long distances from shore and in remote offshore locations.
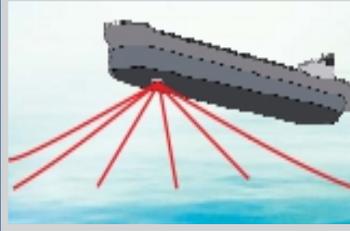
In **FPSO** units with turret systems, MoorSafe uses radio transmission for real-time inclinometer data transfer, offering flexibility and reliable wireless communication tailored to the dynamic positioning and continuous rotation requirements of the platform.

For **semi-submersible** platforms, MoorSafe transmits inclinometer data through an Ethernet network, ensuring fast, stable, and secure communication integrated with the platform's existing infrastructure.

In **taut-leg** configurations, MoorSafe precisely calculates anchor line angulation by detecting even very small variations in angle, providing accurate and immediate alerts for changes in mooring line behavior.

What the Software Provides

The MoorSafe monitoring software enables:
- Continuous monitoring of the angle of each mooring line.
- Alarm configuration per line, cluster, or metocean condition.
- Graphical visualization and angle-versus-time history.
- Fast detection of sudden variations that may indicate overload or imminent failure.
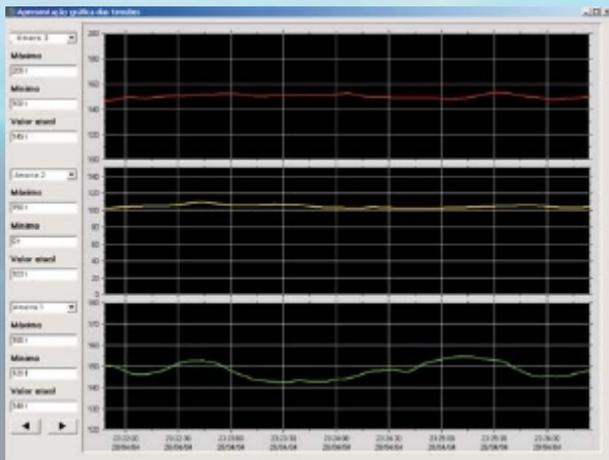
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