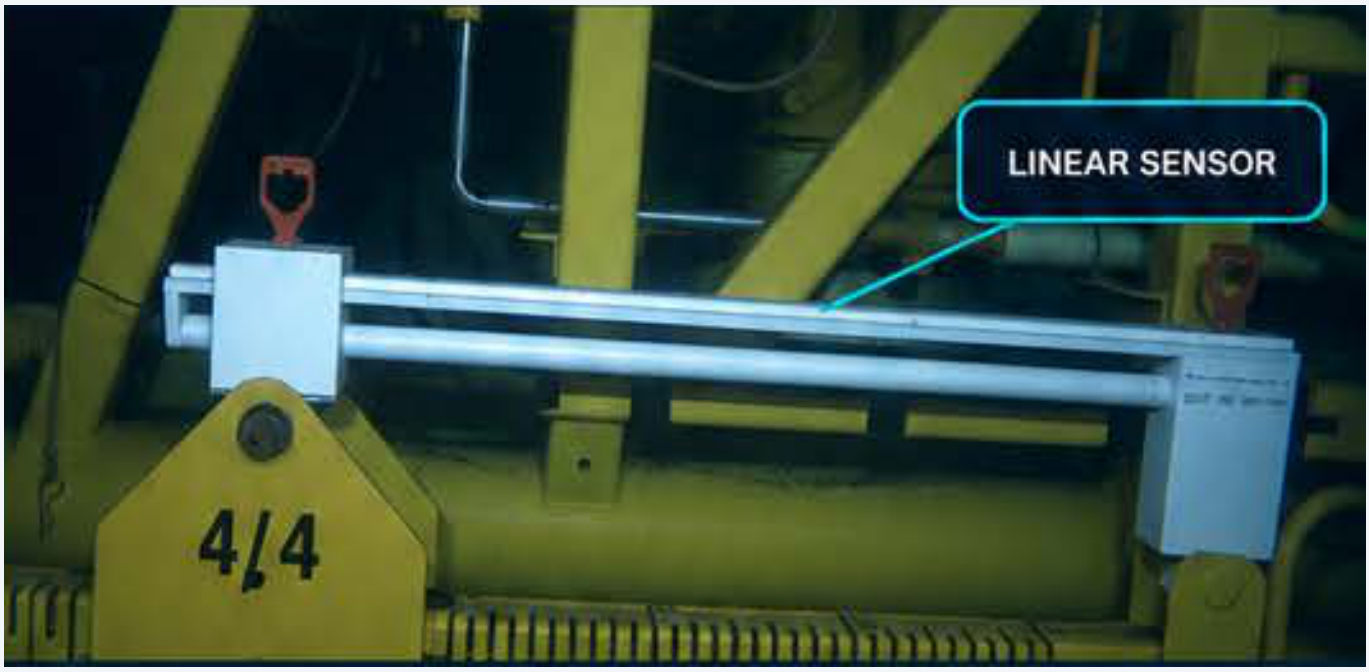
Unlocking Subsea Autonomy

# Lattice WMS

## Walking Monitoring System




## Reliable measurement of pipeline walking

Pipe walking is the progressive axial movement of a pipeline during repeated heating and cooling. Accumulated movement can increase loads on terminations and connections. Lattice WMS measures this movement to support risk assessment and mitigation decisions.

**Drift-free linear measurement | Battery life up to 30 years**

## Reliable sensing, long-life operation

A magnet on the moving pipe passes over a fixed linear sensor. Reliable, drift-free displacement measurement is combined with low-power electronics, local storage and wireless recovery. Battery life can reach 30 years in a project-specific configuration.

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# Specifications and integration

Absolute displacement | Pipeline-end installation

| Parameter | Specification |
|---|---|
| Measurement | Magnet moving relative to a fixed linear sensing element. |
| Measurement span | 1.6 m standard. Custom spans up to 4 m. |
| Accuracy | 10 mm standard. 2.5 mm and 1.25 mm options. |
| Sampling | 1 sample/hour standard. Configurable or event-triggered. |
| Outputs | Displacement, cumulative walking, movement by cycle, rate and direction, threshold events. |
| Information recovery | ROV/AUV recovery, subsea electronics module (SEM) integration or a gateway route into Lattice MARS. |
| Recovery time | Depends on logging profile, selected information and communications link. |
| Depth rating | 1,500 m standard. Up to 3,000 m option. |
| Battery endurance | 10 years standard. Up to 30 years for a project-specific configuration. |
| Installation | Retrofit or new-build. ROV-installable mounting. |
| Qualification | WMS configuration qualified to API 17F. |

## Measurement and information recovery

Measure pipeline-end expansion, movement by thermal cycle and cumulative axial walking relative to a fixed datum on the flowline end termination (FLET). Time-stamped outputs support walking-model calibration, mitigation, inspection and life-extension decisions.

## Built for long-term pipeline monitoring

Lattice WMS combines reliable, drift-free linear sensing with long-life power and wireless recovery in an ROV-installable system for new-build and retrofit pipelines. Operators gain a long-term history of actual movement to calibrate walking models, target mitigation and manage pipeline integrity throughout the asset life.

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