



Lattice Link™ Walking Monitoring System (Lattice WMS) is a cost-effective solution for flowline monitoring, providing reliable information to enable timely decisions on walking mitigation leading to reduced risk of flowline failure.

Lattice WMS is a smart wireless device incorporating a drift-free linear sensor, memory, edge processing, magnetic wave communications and integrated 10-year battery. Designed for monitoring subsea flowline walking on new-build or retrofit and for hot-swap, it is interrogated by Lattice-enabled Subsea Electronics Module (SEM) or by fly-by ROV.

The simplicity and reliability of the Lattice WMS leads to a more accurate, reliable and cost effective solution than ROV visual surveys or acoustic transponder array. Industry experience of interrogating such historic walking data has highlighted the limitations and the uncertainties in predicting actual behaviour.

Features

- Reliable, accurate, drift-free continuous monitoring of displacement
- Wireless recovery of walking information to Subsea Electronics Module (SEM), ROV or AUV
- Low power consumption leading to a battery life of 10 years
- Stand-alone system that can be fitted in minutes, recovered and retrofitted elsewhere but could also be pre-installed with minimal ROV intervention for initial set up.
- Qualified to API 17F
- Optional sensors: flowline temperature, pressure, accelerometer, acoustic



Lattice Link™ Walking Monitoring System (WMS)



Lattice Link™ Pipe Walking Monitoring System (Lattice WMS) monitors the position and movement of the flowline relative to a calibrated linear sensor fixed to a datum. A sliding magnet assembly attached to the flowline passes over the Lattice WMS Sensor. As the pipe moves the magnet position is sensed by a linear array of magnetically sensitive switches which are mounted inside the Lattice WMS Sensor. The precise position of the flowline is determined by algorithm.

Walking information is recovered in real time from a Lattice-enabled SEM or harvested periodically by ROV or AUV.

Lattice WMS System Architecture



Key Specifications

WMS Linear Sensor Measurement Range	Standard: 1.6m; Custom: Up to 4m
Measurement accuracy	Standard: 8mm; Custom: 2mm
Measurement Interval	Standard: 1/hr; Custom: adjustable
Wireless information transfer	Range: Up to 10m to ROV; up to 500m to SCM
Wireless download time	Standard: < 2 minutes for 1 year of walking information
Battery	Primary Cell lithium-manganese dioxide (Li-MnO ₂) chemistry 10 year life
Depth rating:	Standard: 2000m ; Custom 3000m
Clamp	Custom
Operating temperature	Operating 4°C to + 50°C, Storage -10°C to + 60°C
Working environment	Subsea/Underground/air
Weight (WMS excluding mount)	Standard: 15kg (in air)
Dimensions (WMS excluding mount)	Standard: 2750mm x 120mm