

WMS Wellsite monitoring solutions

Improve the safety and efficiency of your wellsite with Straininstall's wireless line tension monitoring solution.



WMS ensures safe and accurate monitoring

Straininstall's proven hazardous area, Zone 1 certified, wireless technology improves the safety of your wellsite and provides highly accurate line tension monitoring.

The Wellsite Monitoring Solution (WMS) was developed in conjunction with a major oil and gas service company as a direct replacement for existing cabled sensors, or hydraulic load cells, for wellsite monitoring applications.

By eliminating the need for cabled sensors, WMS directly improves on-site safety, reduces costs and can be integrated without system modifications.

Straininstall's wireless sensors offer improved accuracy, particularly over hydraulic load cells or running line monitors, and are able to log data rather than just monitor, providing access to historic data for analysis.

WMS provides considerable benefits over existing wired sensors by reducing the risk and associated costs of non-productive time (NPT) resulting from lost or intermittent sensor data during time-sensitive operations such as wireline logging.

Straininstall has over 50 years' global experience in delivering highly specialised monitoring solutions. Our wireless sensor technology has been field-tested in the UK, Norway and US Gulf of Mexico, delivering proven, repeatable results in a wide range of applications in hazardous areas.

How does WMS work?

WMS uses a battery powered wireless module that logs data while simultaneously transferring data to a range of displays, from digital handheld units, to local networks and analogue gauges.

Features and benefits of WMS

Strainstall's Wellsite Monitoring Solutions have been specifically developed for today's modern digital oilfield to ensure accurate and safe monitoring.

The dual channel wireless setup ensures connectivity at all times and by eliminating the need for cables and cost of cable replacements, the system rapidly repays the investment.

Features:

- Wireless technology
- Hazardous area certified (Zone 1, 2 ATEX, IECEx and North American Hazloc)
- Direct replacement of existing load cells
- Integrated without system modifications
- Interfaces to any system
- Output via voltage, serial, ethernet or bespoke
- Data to server capable
- Data logging directly on the load cell
- Input k-factor at load cell
- User configurable overload / max pull alarm
- Radio frequency (RF) detonator safe tested

Benefits:

- Reduces risk of trip hazards
- Eliminates the need for cables
- Improved accuracy
- No change to existing sheave set up
- Lowers risk of NPT
- Post-job data analysis
- Reduces rig-up time

Applications

WMS-Wireline

WMS-Wireline can be fitted at the top or bottom sheave, making it a highly accurate and versatile solution for monitoring line tension during wireline operations. Strainstall's wireless, sheave located sensors offer increased accuracy compared to running line tension monitors.

No changes to existing sheave arrangements make WMS cost effective to install. Any tension rating available from less than 1,000 to over 100,000 pounds.

WMS-Slickline

Strainstall's wireless sensors eliminate the need to run a hydraulic hose to the unit, simplifying an operation and removing the cost of replacement due to damage.

Designed to withstand the harsh working environments of slickline operations WMS is built from lightweight high tensile, aerospace grade, anodised aluminium and offers a simple retrofit solution.

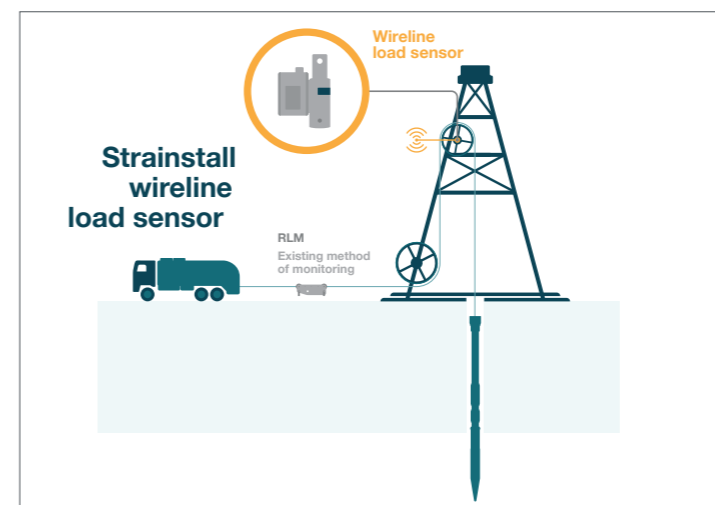
Use WMS-Slickline at the hay pulley to accurately show small downhole weight changes. By inputting a K-factor WMS can also provide cable angle compensation and indicate actual downhole weight change in real-time.

Data displayed to a zone 1 hand held, battery powered display or analogue gauge. Available for any capacity including 1,000 to 10,000 pounds.

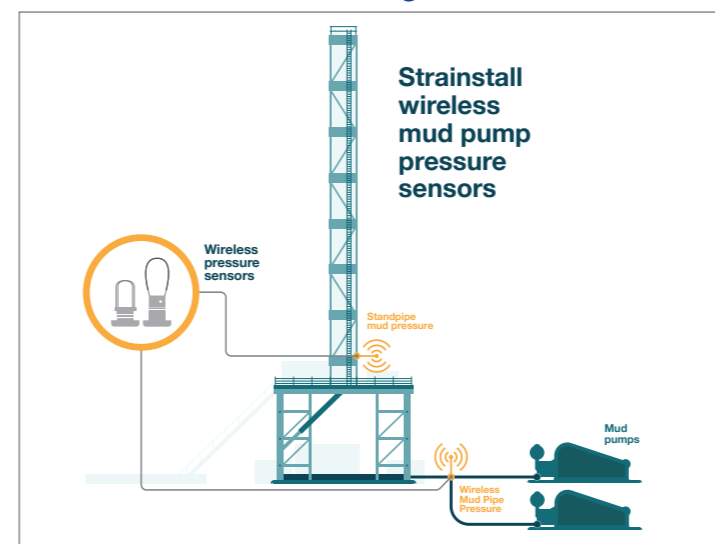
WMS-Coiled Tubing

Monitors weight and pressure with wireless load cells and pump pressure sensors.

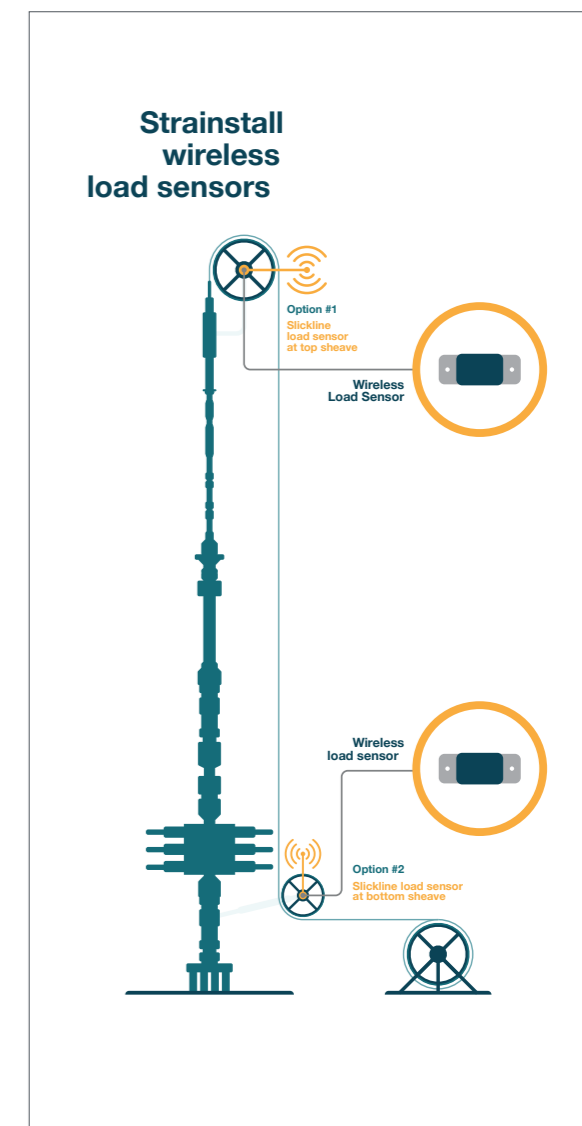
WMS-Wireline



WMS-Pressure monitoring



WMS-Slickline



New applications

Our wireless technology ensures safety throughout well intervention, logging and now drilling with;

WMS for pressure monitoring

WMS-PM replaces existing mud pressure sensors to provide data wirelessly to the rig and measurement-while-drilling (MWD) unit. High frequency sampling, currently up to 400Hz, ensures accurate MWD decode.

Any application

Strainstall can design and supply a wide range of wireless sensors for any oilfield application.

Built to withstand the toughest hazardous environments the ATEX, IECEx and North American Hazloc approved wireless technology can be used in any application monitoring; pressure, load, level, flow, torque, stroke counters, etc.

To add WMS to an existing or new application please contact Strainstall at enquiries@strainstall.com or call +44 (0)1983 203 600

Specification

General radio	
Radio type	Transceiver (two way)
Frequency	2.4GHz
Transmit power	63mW
Range	250m (clear line of sight)
Loadcell	
Operating temperature range	-20°C ≤ Ta ≤ +40°C
IP rating	IP 66
Calibration	10 point
Resolution	24 bits
Data storage (Built-in)	8GB (365 days)
Load rating	As required
Battery	Alkaline D Cell
Battery life	21 days
Handset	
Operating temperature range	-20°C ≤ Ta ≤ +40°C
IP rating	IP 66
Battery	Alkaline AA Cell
Battery life	30 hours (continuous)
Receiver unit	
Operating temperature range	-20°C ≤ Ta ≤ +60°C
IP rating	IP 66
Power supply	24 Vdc 100mA
Wall Mounted Display (Safe area)	
Display	Backlight LCD
Power supply	24Vdc 500mA
Connectivity	Ethernet Serial (rs232, rs485) Analogue (4-20mA)
IP rating	IP 66
Wall Mounted Display (Zone 1)	
Display	Backlight LCD
Power supply	24Vdc 500mA
Connectivity	Ethernet Serial (rs232, rs485) Analogue (4-20mA)
IP rating	IP 66

Hazardous area certification

Loadcell
Ex ib IIB T4 Gb (-20°C ≤ Ta ≤ +40°C) Ex ic IIB T4 Gc (-20°C ≤ Ta ≤ +40°C) Class I, Division 2, Groups C-D, T4 (-20°C ≤ Ta ≤ +40°C)
Handset
Ex ib IIB T4 Gb (-20°C ≤ Ta ≤ +40°C) Ex ic IIB T4 Gc (-20°C ≤ Ta ≤ +40°C)
AEx ib IIB T4 Gb (-20°C ≤ Ta ≤ +40°C) Class I, Division 2, Groups C, D, T4 (-20°C ≤ Ta ≤ +40°C)
Receiver unit
Ex ec mc IIB T4 Gc (-20°C ≤ Ta ≤ +60°C)
Class I, Division 2, Groups C-D, T4 (-20°C ≤ Ta ≤ +60°C) Class I, Zone 2, IIB T4 T4 (-20°C ≤ Ta ≤ +60°C)



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