

ForeSite[®] Sense Equipment Monitoring

Predicts pumping-unit failures and maximizes uptime

Applications

- Conventional pumping units of all types and brands
- Reciprocating rod-lift systems with critical bearing-wear

Features and Benefits

- Exclusive sensor forecasts failures in time for corrective maintenance
- Sensor connectivity readily interacts with existing controllers for remote SCADA monitoring
- Intuitive wrist-pin design makes retrofitting or replacement easy on existing units
- Central data-aggregator operates on its own or housed in existing controller units
- Data aggregator retains history of each bearing for long-term analysis

Tool Description

The Weatherford Foresite Sense equipment monitoring sensor provides exclusive failure prediction for the wrist-pin of a surface pumping unit. As wrist-pin wear levels rise, the sensor will notify operators before catastrophic failures occur, which eliminates costly downtime, lost productivity, equipment damage, and HSE issues.

Installed over the wrist-pin cap of a surface pumping unit, Foresite Sense equipment monitoring detects and measures wear on the individual wrist-pin bearings and transmits the data to a central data collector. The intelligent sensor periodically performs a series of vibrational readings and produces a fast-Fourier transform (FFT) analysis.

Operators can determine individual levels of wrist-pin wear based on preset ranges. This data is stored locally and transmitted to the central data unit for collection by the local controller, SCADA system, or the Weatherford ForeSite production-optimization platform.



Foresite Sense equipment monitoring installs over the wrist-pin cap of surface-pumping units of all major brands.



ForeSite[®] Sense Equipment Monitoring

Specifications

Sensor

Description	Standard (if applicable)	Criteria (if applicable)	Value or result
Frequency	0 to 40 MHz	FFT analysis	-
WiFi IEEE interface	802.11	Wireless B/G/N/E/I	-
Over-the-air (OTA) updates	-	Firmware trigger limits sleep/wake cycle	Default 7-day
File storage	FAT32	>25 years cycle dependent	8 GB
File data	Bearing-wear algorithm value, FFT analysis, time, battery voltage, temperature, alarm peak (g), alarm frequency		Composite tables of all run data
Security	WPA2	SSID	Unique
Sleep	7 days	Variable	-
Battery	Lithium D Cell	XL-205F 3.6 V 19,000 mAh	18 months

Data Collector

Description	Standard (if applicable)	Criteria (if applicable)	Value or result
Frequency	0 MHz to 40 MHz	FFT analysis	-
WiFi IEEE interface	802.11	Wireless B/G/N/E/I	16 concurrent TCP connections
OTA updates	-	Firmware individual sensor files	-
File storage	FAT32	>25years no sensors dependent	16 GB
File data	Bearing-wear algorithm value, FFT analysis, time, battery voltage, temperature, alarm peak (g), alarm frequency		Individual composite tables of all run data from all synced sensors
Security	WPA2	SSID	Unique
Controller/SCADA interface	Modbus	RS-485	2-Wire
Real-time clock	-	-	-
Power	10 Vdc to 25 Vdc @ 250 mA		

