



# ADVANCED SENSORS Ltd

## COMPANY PROFILE

**Advanced Sensors Ltd** is a leading technology based company in the United Kingdom and provides instrumentation, detection systems and communication solutions for the oil and gas industries.

The company was formed in 2005 to exploit the market need for a trouble free, zero maintenance oil in water analyzers. Using innovative technology for which patents are pending Advanced Sensors Ltd has produced their OIW-EX Series range of Oil in Water Analyzers.



Specializing in optoelectronic instrumentation, detection systems and communication technologies Advanced Sensors Ltd continue to invest in the development of innovative products for **ADVANCED SENSORS** customers.



The company is committed to providing solutions which will provide accurate and timely results deliverable anywhere in the world while operating in harsh conditions.

The company is **ISO 9001:2008** certified.

Each analyzer is marine certified as per **MEPC.107(49)**

**Maintenance free**, the OIW-EX series of oil in water monitors are designed to operate in hazardous environments and provide consistent, accurate and uninterrupted measurements. Using ultrasonic technology, ADVANCED SENSORS products provide a consistently reliable measurement environment. This negates the need for flow mechanisms, mechanical mixers, chemical additives or human intervention.



## **The Challenges of Oil in Water Monitors**

### **Oil types fluoresce differently directly affecting measurement**

The EX100/1000 can store 1000's of different oil type characteristics for measurement, the optics are designed to be tolerant to various oil types. The EX1000's spectrometer capability ensures oil type variation can be accurately monitored and accommodated.

### **Oil Droplet size affects fluorescence and measurement**

The EX-100&1000 Ultrasonic processing provides continuous accurate measurement that is unaffected by oil droplet variation.

### **Fouling of sensors, Flow rate variation, Pressure variation and clogging pipe-work have plagued Optical Monitors for decades**

The EX100 & Ex1000 are designed to be flow and pressure tolerant, the large pipe-work is not susceptible to slug clogging and the measurement chamber is automatically cleaned ultrasonically.

Each of ADVANCED SENSORS detection systems, analyzers and oil in water monitors are compatible with Microsoft Windows XP Professional operating system. ADVANCED SENSORS unit's data logging capacity captures ten years of:

PPM measurements

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Water sample temperatures

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System diagnostic information

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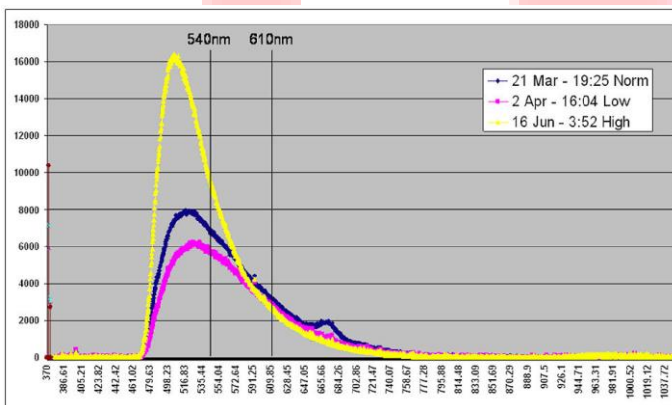
Full scan optical spectrum of samples (OIW-EX1000 model only).

User friendly, ADVANCED SENSORS oil in water monitors boast an intuitive interface with clear and uncomplicated display facilities. ADVANCED SENSORS analyzers and detection systems can be configured using drop down menus with the measurement cycle clearly displayed.

Using ultrasonic technology the OIW-EX products provide a consistent reliable measurement environment negating the need for flow mechanisms, mechanical mixers, chemical additives or human intervention.

**The OIW-EX products detect oil concentrations from low ppb to 20,000 ppm.**

Measured values are recorded every second in the 'Data Logs' and displayed graphically and numerically on the instruments display.



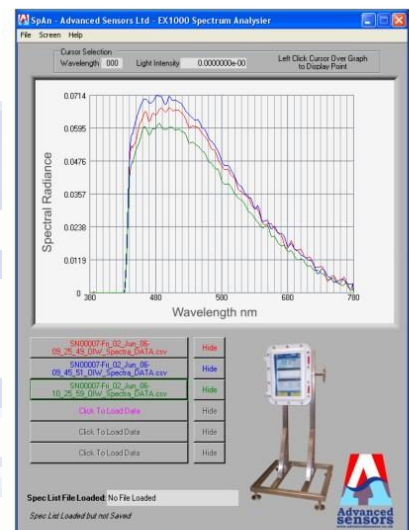
The EX1000 has an inbuilt optical spectrum analyzer that allows for enhanced analysis of produced water. The unique additional layer of analysis that the spectrometer provides sets a new standard of capability providing information that was previously thought unattainable, empowering process engineers with a far greater insight of process dynamics resulting in improved process management.

The spectrometer operation can be:

- » Scheduled
- » Set to trigger at a selected PPM level
- » Initiated manually

Advanced Sensors software suite includes SpAn simplifying the analysis of multiple optical scans simultaneously. The scans are archived as part of the data logging feature, capturing accurately the time and the reason for the spectrum scan.

The OIW-EX products are housed in an **Eex d ATEX Certified** enclosure meaning that they are ready to use straight out of the box, with no purged air required.



Screen Shots of SpAn™ Software

The simple easy-to-use interface and clear uncomplicated display facilitates simple configuration and use of the instrument.

Configurations are easily selected using drop down menu bars and the current status of the measurement cycle is clearly displayed as it steps through the chosen configuration.

The flexibility of the user interface provides an unlimited variety of configuration settings, empowering the user to tailor the OIW-EX products to their specific needs.

The OIW's well known Windows XP Pro interface minimizes the learning curve needed to interact with the unit either directly or remotely across a network.

Backing up files, finding individual logs or viewing information is done simply in just few familiar key presses.

The operating system is built on the globally recognized Windows operating system, offering a familiar environment for fast and easy access. The units data logging features capture 10 years of:

- » PPM measurements
- » Water sample temperatures
- » System diagnostic information
- » Full scan optical spectrum of samples.

Advanced Sensors software suite includes LogView for the OIW-EX product range. LogView has been designed to quickly and easily display the data logs with just a few clicks of the mouse. LogView facilitates the analysis of multiple data logs via ADVANCED SENSORS coded displays for comparison.

Data logs can also be accessed with any spreadsheet or database application such as Microsoft's Excel, to allow easy evaluation and analysis of measurement results.

### Local Access

The OIW-EX product range will display and relay measurements simultaneously via an industry standard 4-20mA link for easy integration into existing systems. Total access and control of the instrument is provided via the Ethernet or ADSL (twisted pair) interfaces, this connectivity provides access to the instrument up to 1Km away.



The level of management and control provided is unprecedented in an OIW monitor.

When OIW-EX units are networked to the internet, remote access, control and diagnostics is possible anywhere in the world, allowing multi site monitoring of all OIW-EX units.

Networking provides simultaneous visibility of measurements from multiple OIW-EX units dispersed throughout the network; a specific OIW-EX unit can be selected for further investigation or control by simply selecting the unit with a click of the mouse.

When choosing an analyzer please be aware that ADVANCED SENSORS OIW-EX Series of analyzers incorporate the following features and functions which are of the greatest importance:

**1. Range:**

ADVANCED SENSORS analyzers measure all oil from 10ppB (Billion) to 20,000ppM (Million).

**2. Maintenance Requirement:**

ADVANCED SENSORS analyzers are maintenance free .

**3. Cleaning Requirement:**

ADVANCED SENSORS analyzers have no cleaning requirement. Using unique ultrasonic technology ensures no fouling or scaling build up.

**4. Blocking:**

ADVANCED SENSORS analyzers are not affected by solids or oil slugging.

**5. Chemical Interference:**

ADVANCED SENSORS measurements are not affected by process chemicals.

**6. Sample Pressure Variation:**

ADVANCED SENSORS measurements are not affected by pressure variation 0-200Bar.

**7. Flow Variation:** ADVANCED SENSORS measurements are not affected by flow variation 0-1000L/min.

**8. Gas Bubble Interference:**

ADVANCED SENSORS measurement is not affected by Gas bubbles.

**9. Solids Interference:**

ADVANCED SENSORS measurements are not affected by solids.

**10. Wetted Part Materials:**

ADVANCED SENSORS analyzers wetted parts are 316l as standard and optionally 22CR and 25CR (Chrome Duplex).

**11. Remote Connectivity and Support:**

ADVANCED SENSORS analyzers can be connected to the intranet or internet and monitored and supported from anywhere in the world.

**12. Remote alarming:**

Alarms can be sent via emails or text messages to mobile phones.

**13. Data logs:**

ADVANCED SENSORS analyzers store measurements taken every second for 10 years.

**14. User Interface:**

ADVANCED SENSORS analyzer is Microsoft Windows XP based providing a familiar operating environment.

**15. Water Composition:**

ADVANCED SENSORS analyzer's spectrometer monitors water composition and will generate alarms should the composition change.

**16. Proof of Performance:**

Operationally ADVANCED SENSORS analyzers provide 100% customer satisfaction year on year with no cleaning or maintenance.

**17. Footprint:**

The area required for the analyzer is 0.6m x 0.6m (2ft x 2ft).

