

# ANALEXrs

Moisture Sensor



Remote Sensors - the online link between your machines and ultimate reliability

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## Moisture Sensor



# Water ingress costs you more than you think!



Without a doubt, you're running a high quality maintenance programme.

You feel confident you have it all under control.

That critical plant is in safe hands.

Operating schedules are going to be met.

Or are they? What if the plant stops because of failure of that critical machine?

What about the repair costs, the downtime, the loss of revenue? Never mind the added risk to personnel health and safety, or the environment.

You probably already know that free and emulsified water cause problems. **But, did you know that water can increase the oxidation rate of your lubricant by more than ten times?** That's why your oil analysis service includes a water-screening test.

But were you aware that bearings could lose 75% of their potential service life due to water before the oil even begins to start to look cloudy? Even in its dissolved state the water is at work, attacking the base stock, the additive package, and the machine. And, water can carry organisms with it that could disable your critical hydraulic systems.

But how frequently are you sampling? What if a problem arises between scheduled samples?

Wouldn't it make sense to be monitoring more frequently?

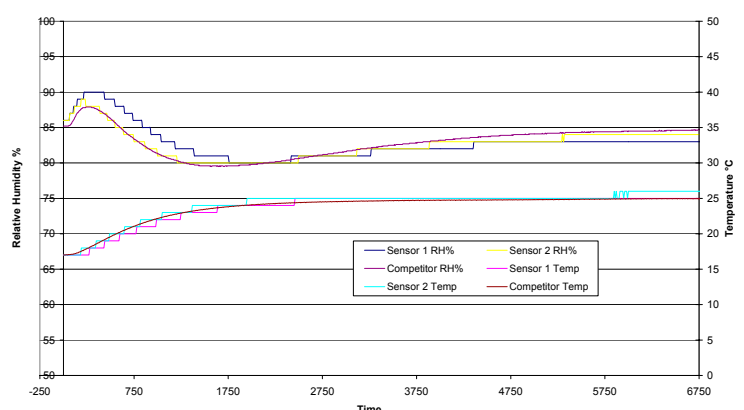
Well now you can. **The ANALEXrs Moisture range of online**

**sensors puts your oil analysis laboratory on your doorstep.**

Brought to you by the same company that has been successfully delivering millions of PQ results to engineers the world over from hundreds of laboratories for the last 25 years. And now manufactured by Kittiwake, a company that has been delivering low-cost, robust field instrumentation to the lubricants and fuels market for over 15 years.

The ANALEXrs Moisture sensor goes beyond the normal water screening tests to tell you exactly how dry your oil is. Providing a % Relative Humidity (RH) and temperature values, now you can monitor real-time. You can ensure that your oil is always below the saturation point before free and emulsified water starts to form. And take immediate action on the first indication of change. **The ANALEXrs Moisture sensor goes beyond the normal protection systems; 'it monitors the root cause of machine and lubricant failure.**

Kittiwake and Leading Competitor Moisture sensors in KCl generated atmosphere

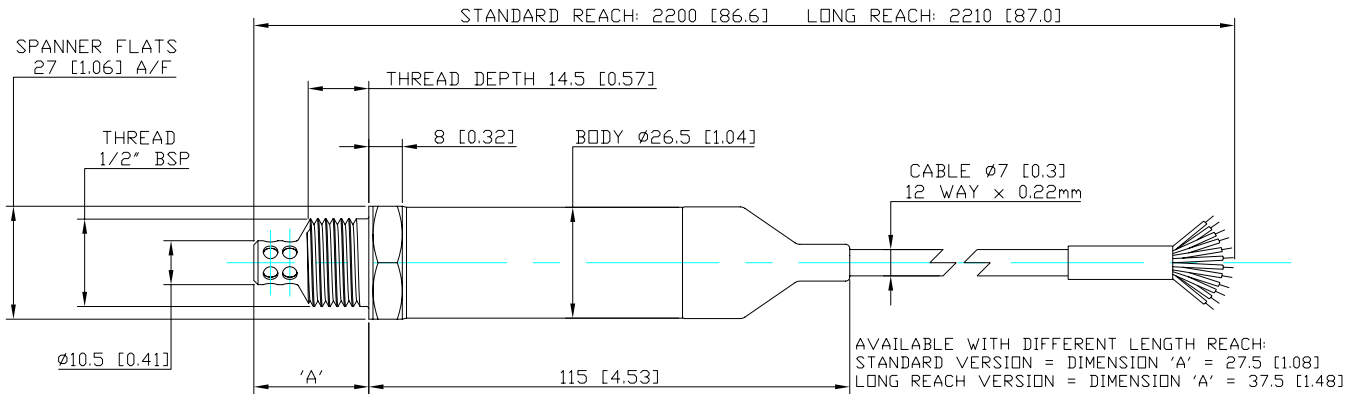


# ANALEXrs

## Technical Specifications

DIMENSIONS IN MILLIMETERS [INCH]

THREAD VARIATIONS - METRIC M22 x 2.50 PITCH - AVAILABLE BY SPECIAL ORDER  
 CABLE LENGTH VARIATION AVAILABLE BY SPECIAL REQUEST



<b>Detection</b>	0-100% Saturation
<b>Analogue Outputs</b>	4-20ma % saturation & Temp of Oil, Open collector for Alarm
<b>Alarm Defaults</b>	Temperature: not configured Saturation: on at 65% (open), off at 60% (closed)
<b>Digital Outputs</b>	RS232 at 9600baud CAN Kittiwake Proprietary Protocol + other options on request
<b>Digital Inputs</b>	RS232
<b>Power Supply</b>	12-30Vdc <1w
<b>Max Fluid Pressure</b>	10bar
<b>Fluid Temperature</b>	-40 to 100°C
<b>Fluid Compatibility</b>	Petroleum and synthetic oils
<b>Accuracy Temperature</b>	+/-1°C
<b>Accuracy Saturation</b>	+/-2%
<b>Response</b>	Typically 30 seconds
<b>Material</b>	304 Stainless Steel
<b>Sealing On Enclosure</b>	IP67
<b>Connection Method</b>	By multicore screened cable
<b>Calibration to</b>	ISO/IEC 17025, NIST & NPL Traceable
<b>Weight</b>	0.3 Kg

nb: Not to be used in aqueous solutions

The ANALEXrs Moisture sensor can be mounted within any lubrication system on any type of machine. Moisture sensors need not be in the fluid to be effective and are also of use in the headspace of a piece of machinery. The sensor measures the oils percentage Relative Humidity, resulting from the dissolved water within the lubricant, using a combination of proven thin film capacitance sensors, combined with smart algorithms to provide a temperature and % RH value. **ANALEXrs puts you in control.** You know that the more severe the moisture ingress problem, the greater the potential risk.

Using internal processing power the self diagnostic sensor does not require handheld units to analyse or display results. It can be easily integrated into your existing Condition Monitoring and operating control systems, and results can be reported using standard displays or any PC. Whether it's to check on the health of the machine, or an alert of changing moisture ingress rates, the ANALEXrs Moisture sensor provides instant information, complementing your existing laboratory oil analysis programme, and helping you make informed maintenance planning decisions.

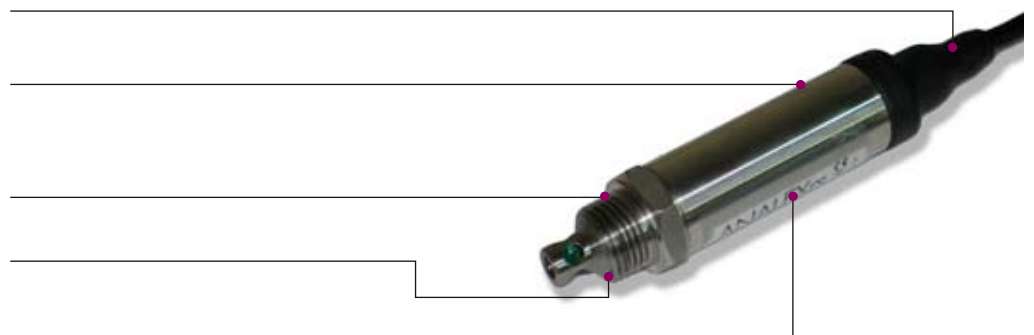
High integrity sealing – using standard automotive techniques

Stainless steel housing – Rugged and long life performance

Widely used 1/2" BSP thread – Quick and easy installation to a wide range of machinery

High pressure resistant glass to metal hermetic seal

Smart Sensor with internal processing power offers wide range of interface options



# ANALEXrs

## Technical Specifications and Applications

### Typical applications:

The sensor will prove most valuable when used with machines that are either:

- A high capital cost
- Production critical
- Safety critical
- Costly to repair
- Have long lead times on spares.



ANALEXrs equipment can be fitted on any machine with a circulating lubricating system, and where atmospheric, process or coolant issues are an issue.

Examples include equipment such as:

- Engines
- Hydraulics
- Gearboxes & Transmissions
- Bearings
- Pumps
- Compressors
- Turbines
- Transformers

Industries such as:

- Power Generation (Steam, Nuclear, Wind turbine)
- Steel
- Pulp & Paper
- Petro-chemical/refineries
- Transportation
- Military
- Marine

Specifications	Total Ferrous Debris Sensor	Oil Condition Sensor	Particle Content Sensor	Moisture Sensor
<b>Product Code</b>	FG-K16120-KW	FG-K14492-KW/FG-K16203-KW	FG-K16121-KW	FG-K16291-KW
<b>Detection</b>	Total Ferrous Wear Debris 0-2000ppm	Oil Condition 0-100 Oil Quality Units	Ferrous Particles > 100µm and Metallic Non-Ferrous Debris Particles > 200µm	0-100% Saturation
<b>Analogue Output</b>	4-20mA	4-20mA	4-20mA	4-20mA % saturation, Temperature of Oil, RH Alarm
<b>Digital Output</b>	CAN, RS232, RS485, radio link	RS232, CAN	CAN, RS232, RS485, radio link	CAN, RS232 at 9600baud
<b>Power</b>	18-36 VDC	15-30 VDC, 1 watt max	18-36 VDC	12-30Vdc <1w
<b>Maximum Fluid Pressure</b>	10 bar (145psi)	10 bar (145psi)	10bar (145psi)	10bar (145psi)
<b>Fluid Temperature</b>	-20 to 65°C (-4 to 149°F)**	30 to 100°C (86 to 212°F)	-20 to 65°C (-4 to 149°F)**	-40 to 100°C (-40 to 212°F)
<b>Protection</b>	IP65	IP67	IP65	IP67
<b>Sensor Weight</b>	2.2kg (4.85lb)	250g (9oz)	1.4 kg (3.1lb)	300g (10.6oz)

\*\*Kittiwake operates a continuous development program and thus certain specifications may be subject to change.

nb: Visit the Kittiwake website to view the latest case study data, detailed specifications and technical information.

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