OXSENSIS

Optical sensors for harsh environments

Oxsensis manufactures optical pressure sensors to aerospace quality standards for Flight Systems, Power Generation and Oil & Gas applications

CERTIFIED ISO 9001:2015

CERTIFIED AS 9100

www.oxsensis.com

Industries

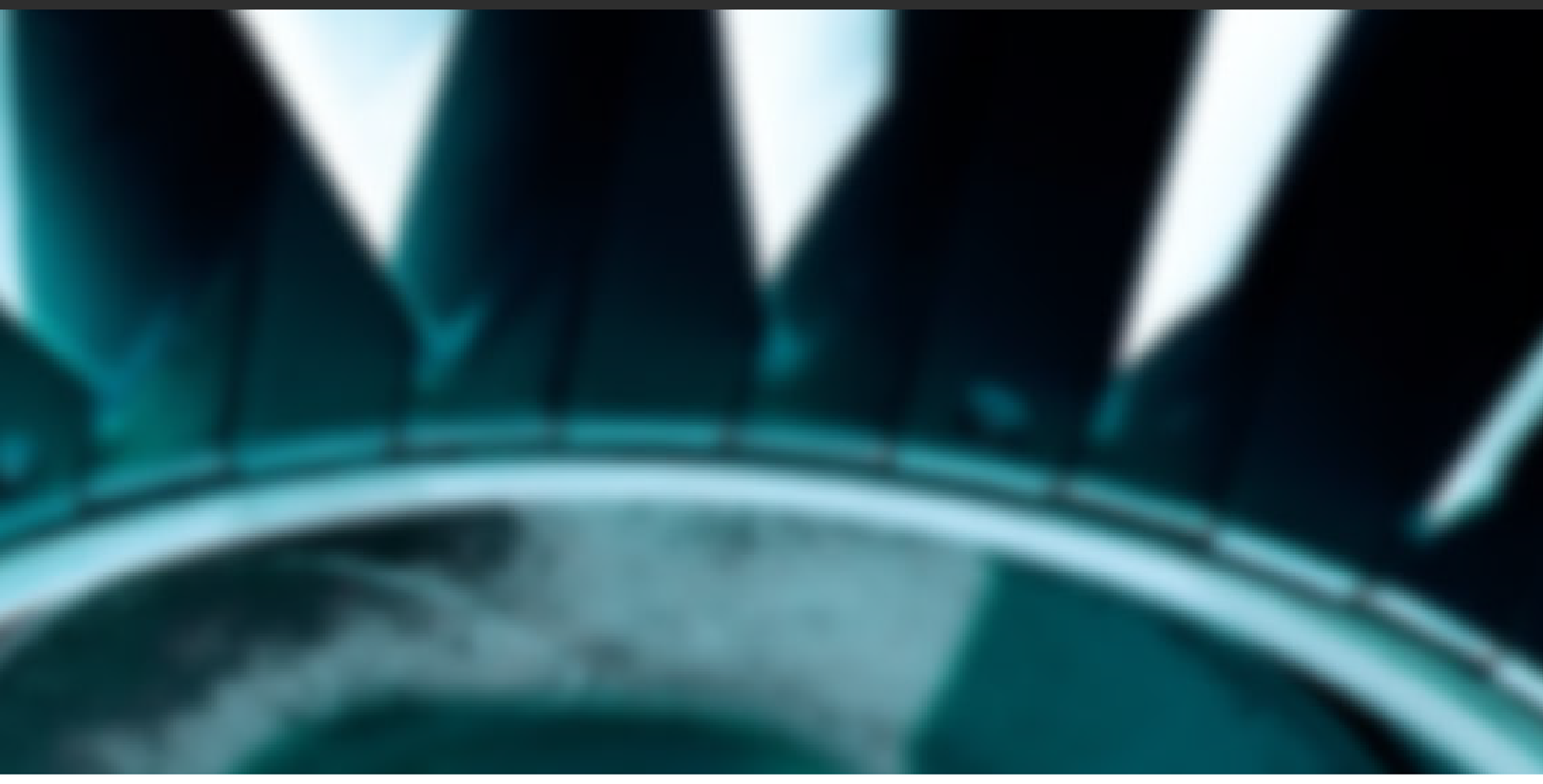
AEROSPACE

Optical sensor systems enable EMI immune monitoring of pressure, temperature, acceleration, optical position and rotational speed within flight systems. The move to optical sensing across multiple systems creates saves weight, cost, space and reduces the burden of safety.

Ion-thruster satelite propulsion systems generate an extreme electromagnetic and thermal environment for a temperature sensor. Photonic sensors provide a technology platform for innovative solutions.

POWER GENERATION

The environmental performance of land-based gas turbines is making new demands on combustor and compressor sensor performance. Oxsensis high temperature optical sensors simultaneously measure combustor pressure and temperature.



OIL AND GAS

High temperature environoments, typically found in SAGD wells and sub-sea Christmas Trees, exploit the excellent thermal performance of Oxsensis optical pressure/temperature sensors, which are stable, intrinsically safe and immune to electromagnetic interference.

Small form factor high temperature (400°C) optical sensors that concurrently measure dynamic pressure (acoustic noise) and temperature are ideal for condition monitoring in Electrical Submersible Pumps.

RECIPROCATING ENGINES

Developments engines for marine vessel propulsion have a common requirement for the measurement of pressure and temperature in hot, hostile environments, ideal territory for Oxsensis optical sensors.

Optical Pressure Sensor Systems for harsh environments

Oxsensis optical pressure sensor systems exploit patented wave-Phire™ sapphire sensor technology that enables accurate, high sensitivity, measurements to be made at the extremes of electromagnetic interference and temperature (beyond 1,000oC/1,800oF).

Our PT (Pressure Transducer) product range includes instrumentation for real-time measurement of:

- Dynamic pressure (PT1000 range)
- Dynamic pressure, static pressure and temperature (PT2000 range)
- Static pressure and temperature (PT3000 range)

DYNAMIC & STATIC PRESSURE WITH TEMPERATURE

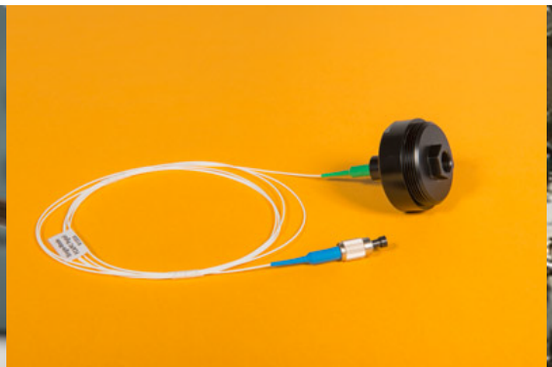
Oxsensis PT2000 Series provide compact, EMI immune, monitoring of dymanic pressure, static pressure and temperature concurrently in one sensor. For research instrumentation applications where high temperature, EMI immune multi-measurand performance is required.

DYNAMIC PRESSURE SENSOR SYSTEMS

Oxsensis PT1000 Series optical pressure sensors for EMI immune monitoring of dynamic pressure at high temperature, perfect for monitoring acoutic oscillations in Gas Turbines. For applications including gas turbines where the sensor needs to be located in high temperature environments to optimise bandwidth

STATIC PRESSURE SENSOR SYSTEMS

Accurate static pressure measurement requires a knowledge of sensor temperature. Oxsensis static pressure sensor systems measure both parameters concurrently. For applications including Fuel Systems, hydraulic pressure, down-hole and sub-sea Oil & Gas where accurate low drift data is required from hostile environments



t-Phire™ optical temperature sensor developments are providing solutions for extremely harsh applications by exploiting the well characterised optical and thermal properties sapphire crystal.

Our i-Phire™ 300 Series interrogators have been developed to accurately measure the substate thickness of the sapphire pill to better than one nanometer in application conditions. With careful choice of the sensor geometry and substrait thickness, fast, reliable and accurate measurements of temperature are becoming increasingly accessible.

OPTICAL THERMOCOUPLE

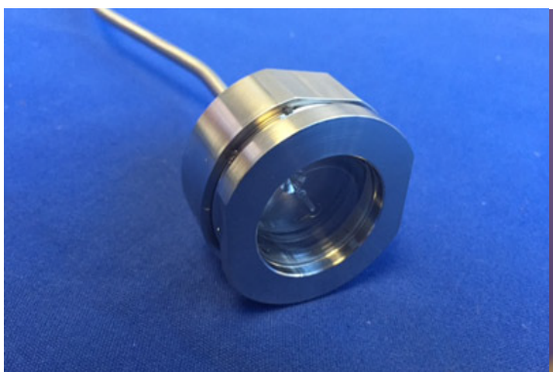
Oxsensis are developing two technology platforms for temperature sensing beyond 1000°C in hostile environments such as aircraft braking systems and satellite ion-thrust propulsion systems.

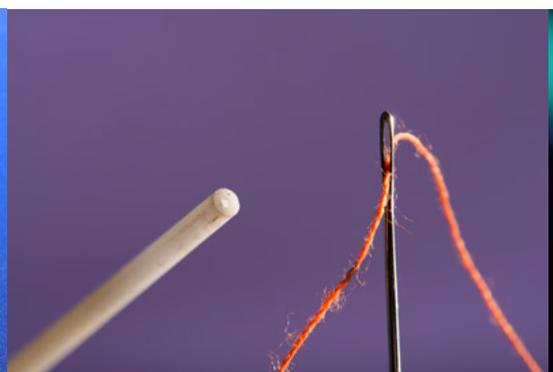
OPTICAL ACCELEROMETER

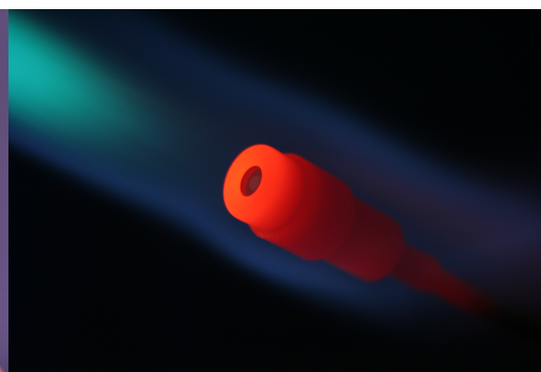
Oxsensis PT1000 Series optical pressure sensors for EMI immune monitoring of dynamic pressure at high temperature, perfect for monitoring acoutic oscillations in Gas Turbines.

Why not partner with Oxsensis to apply the novel technology to deliver competitive advantage in your industry?

a-Phire™ optical acceleration sensors are targeted at high temperature frame gas turbine applications, to physically get the sensor nearer to critical components. This purely passive sensor is, one again, EMI immune and is targeted at ambient temperatures to 750°C. The sensor monitors self-temperature to provide an additional critical measurand and to eliminate thermal cross-talk.







What does the future hold?

Oxsensis is entering the next exciting stage in the evolution of our Oxfordshire based high-tech SME. Our harsh environment optical sensors are going into production to satisfy the requirements of one of our blue-chip customers. We have now moved into our new premises on the Harwell Oxford Campus premises where we will transition from pilot-line to full sensor production, and establish our new Test Laboratories and photonic sensor system development capability.

We continue to work on optical pressure sensor packaging for aerospace, power generation and oil & Gas industry applications and will feed these sensors into production as they emerge from ongoing New Product Introduction programmes. Technology platforms for other measurands continue to be developed as part of collaborative development programmes, many with the support of UK and European public funding.

If you would like to know more about how Oxsensis' sensor and instrumentation products can help you, we'd be delighted to hear from you.

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