

ORAKEL

SYSTEM

DISSOLVED OXYGEN SENSOR

The ORAKEL range of online Dissolved Oxygen (DO) meters are optical luminescent devices which are extremely resistant to abrasion, extremely stable and have greatly reduced maintenance and whole-life costs.



HOW IT WORKS

The sensing element (lumiphore) is excited when illuminated with a blue light. Once excited, the lumiphore emits blue light in an intensity that is inversely proportional to the amount of oxygen present in the water. A secondary red light is used for diagnostics and calibration ensuring long term stability and reliability.

APPLICATIONS

The ORAKEL Dissolved Oxygen Sensor has no chemicals or moving parts.

It is stable and reliable, making it excellent for process controls and is suitable for all dissolved oxygen applications.

For aeration lane blower control and oxidation ditch dissolved oxygen control, the ORAKEL Dissolved Oxygen Sensor offers unrivalled performance.

- Submersion mounting
- Ideal for unpressurised applications
- Suitable up to depths of 210m (25°C)
- Acetyl construction
- 1¼" NPT mounting thread
- T90 <45 seconds
- Titanium construction
- Flow cell mountable
- T90 <45 seconds



STABLE AND RELIABLE

The ORAKEL Dissolved Oxygen Sensor includes a time delay between the peak emission of blue light and peak response of fluoresced red light.

The amount of delay is inversely proportional to the amount of oxygen present.

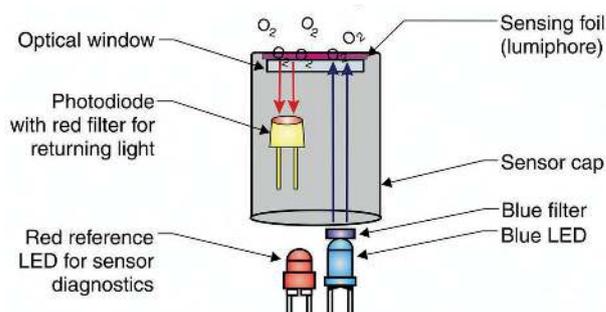
This time delay can be expressed as a phase shift between the wave patterns of incident blue light and the fluoresced red light.

This is in turn reported by the electronics into a ppm or mg/l reading of dissolved oxygen.

STABLE AND RELIABLE (CONTINUED)

The advantages of this technology are that it is more stable than traditional electrochemical devices and far more resistant to abrasion.

By using the state-of-the-art sensor and electronics together the reliability, accuracy and flexibility of the **ORAKEL Dissolved Oxygen Meter** is far superior to that of its competitors.



AUTO-CLEAN AND AUTO-VERIFICATION

The **ORAKEL System** is the first of its kind in the world to offer automatic In Situ sensor verification as an option.

The **ORAKEL Control Unit** is able to reduce maintenance by automatically checking its sensor operation at user defined time intervals.

Calibration on the In Situ sensor is normally required only once per annum so with the automatic sensor verification option and the self clean option, the sensor may not need to be inspected at all for years!



TECHNICAL SPECIFICATION

Type

Lumiphore optical dissolved oxygen.

Measurement

Dissolved oxygen.

Range

0-50mg/l or 0-200% saturation.

Resolution 0.01mg/l.

Accuracy and Precision

±0.1mg/l from 0-8mg/l (1.25%) and
±0.2mg/l from 8-20mg/l.

Stability

Better than 1% per month (without calibration).

Temperature Range >0 up to 50°C.

pH Range pH2 up to pH10.

Salinity Range 0-42ppt.

Temperature Compensation

Automatically by an integrated thermistor.

Permissible Overpressure 10 bar.

Typical Response Limited >25mg/l.

Response Time T90<45s, T95<60s at 25°C.

Zero-Point Adjustment Not necessary.

Calibration

Manual using water saturated air.

Response Check

Automatic with optional autoclean.

Material of Construction

PVC, silicone, polycarbonate and stainless steel.

Dimensions

Diameter approximately 43.7mm OD.
Length 203mm.

Maintenance intervals

Manual calibration 3-36 months,
lumiphore change 24-48 months.

Warranty

The shorter of 24 months from the date of manufacture or 12 months from date of first use.

RDO® PRO-X Probe is a registered trademark of In Situ Inc. Boulder, Colorado, USA.

To learn more about the **Detectronic ORAKEL System** and how it can help your business, get in touch:

Call: **+44 (0)1282 449 124**

Email: **sales@detectronic.org**

Visit: **www.detectronic.org**

