

ORAKEL

SYSTEM

ORP SENSOR

The range of ORAKEL ORP Sensors measure the online redox potential of any aqueous solution. They are platinum-based sensors with integral reference electrodes which use no reagents, are extremely stable and have reduced maintenance and lower whole-life costs.



HOW IT WORKS

ORP operates by measuring the potential between 2 electrodes. The potential tells operators the tendency of the water to oxidise (or reduce) pollutants. Tendency can be seen as a useful measure of the rate of oxidation.

ORP is a REFEX patented sensor which has a solid reference junction, making it particularly resistant to poisoning and drift.

The **ORP4** REFEX sensor is suitable for a range of chemical applications that would normally mean replacing a standard ORP sensor very frequently.

APPLICATIONS

The ORP electrodes are filled with a polymeric gel. This innovative design makes the electrodes more responsive, with a longer life than ordinary electrodes (up to 3 years).

Anywhere you have a requirement to measure ORP is a suitable application for the **ORAKEL System**. The ORP sensor range is particularly suited to working in sites where reliability and ease of use are most important.

Typical water treatment applications:

- Remote sites
- Cooling towers
- Food preparation
- Paper mills
- Chemical process
- Mining

AUTOFLUSH



AUTOCLEAN INSERTION



AUTOCLEAN CELL



AUTOCLEAN IMMERSION

The ORAKEL ORP Sensor range can come equipped to automatically clean itself at user-defined intervals with all the benefits of 'no operator intervention' for 6 months.

The **Autoflush** is particularly useful in food preparation, pulp and paper, plus many other

applications where there is likely to be a build-up of solids in the sample.

Autoflush is available for at line, and in line versions including dip and screw in autoclean pipe version. *See Autoflush data sheet for more information.*

QUICK SELECTION GUIDE

| | |  |  |  |  |
|------------------|---------------------------------|--|---|--|--|
| | | ORP1 | ORP2 | ORP3 | ORP4 |
| Applications | Potable Water | | ✓ | | ✓ |
| | Waste Water | | | ✓ | |
| | Pool/Spa | ✓ | | | |
| | Process | | ✓ | | ✓ |
| Mounting Options | Single Open Flow Cell | ✓ | ✓ | | ✓ |
| | Dual Open Flow Cell | ✓ | ✓ | | ✓ |
| | Triple Open Flow Cell | ✓ | ✓ | | ✓ |
| | Closed Flow Cell | ✓ | ✓ | | ✓ |
| | Autoclean (flow cell) | | ✓ | | |
| | Autoclean Immersion (dip) | | | ✓ | |
| | Autoclean Insertion (in pipe) | | | ✓ | |
| | At Line Tee | | ✓ | ✓ | ✓ |
| Handrail | | ✓ | ✓ | ✓ | |
| Welding Stub | | ✓ | ✓ | ✓ | |
| Specifications | Standard Cable Length | 1m | 6m | | |
| | Maximum Temperature | 80°C | 80°C | 80°C | 100°C |
| | Back/Front Thread | N/A | ¾" NPT (front only) | ¾" NPT (front & back) | ¾" BSP (front & back) |
| | Water Proof Cable (submersible) | | | ✓ | ✓ |

INSTALLATION

The ORAKEL ORP Sensors can be installed in a variety of auxiliary flow cells and self-cleaning devices.



SINGLE OPEN
FLOW CELL



DOUBLE OPEN
FLOW CELL



TRIPLE OPEN
FLOW CELL



SINGLE CLOSED
FLOW CELL



AT LINE TEE
(screw in)



AT LINE TEE
(quick connect)



WELDING STUB
(screw in)

TECHNICAL SPECIFICATION

Type

Platinum band.

Reference Type

Solid state, non-porous Ag/Ag Cl.

ORP Range

-1999 to 1999mV.

Slope

95-102%.

Pressure Range

0-10 bar.

Long Term Stability (drift)

<0.1 mV/hour.

Reproducibility

<0.1 mV.

Response Time

95% of step <5s.

Cable Length

6m.

Shelf Life

12 months.

Wetted Surfaces

PVDF/glass/Pt ring/Viton O rings.

Estimated Life

36 months, application dependent.

Temperature

0-80°C - ORP1, 2 and 3. 100°C - ORP4.

Length

145mm (5.7").

Diameter

26.5mm (1.04").

THE ULTIMATE FLOW AND QUALITY MEASUREMENT SYSTEM



The ORAKEL System

FLOW MEASUREMENT

Open Channel/Pipe:

- Non-contact Flow Sensor
- Submerged AV Sensor

Full Pipe:

- Ultrasonic Time of Flight Sensor

QUALITY MEASUREMENT

- Biofilm Sensor
- Chlorine Sensor
- COD/TOC Sensor
- ORP Sensor
- pH Sensor
- Oil on Water Sensor
- Turbidity & Suspended Solids Sensor
- Dissolved Oxygen Sensor
- Conductivity Sensor

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

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