In-Situ Inc.

RDO® PRO Optical Dissolved Oxygen Sensor

Aquaculture Applications

The In-Situ® RDO PRO sensor uses breakthrough technology to measure dissolved oxygen (DO) in demanding environments. The RDO PRO sensor provides consistent control of DO, which improves feed conversion ratios, minimizes fish stress, and reduces fish disease and mortality. The sensor offers several advantages for monitoring DO in aquaculture applications.

Robust and reliable

- *Inert construction will not corrode in high salinity samples.*
- *Abrasion-resistant foil withstands fouling and damage from turbulent waters.*
- *Insensitive to common interferences that destroy membrane-based sensors.*

Simple design

- *Requires only 8 to 36 VDC.*
- *Eliminates set up errors. Sensor cap is pre-loaded with calibration coefficients.*

Cost effective

- *Includes complete instrument with standard 10-m cable.*
- *Includes integral 4-20 mA, Modbus RS485, and SDI-12 signal outputs.*
- *Eliminates the need for costly external transmitters and controllers.*

Stable, reproducible results

- *Fast response to oxygen and temperature changes.*
- *Sensor holds its calibration and is not susceptible to drift for up to 12 months.*
- *Readings remain stable over long deployments.*

Applications

- ***Open pen production***
- ***Hatchery operations***
- ***Inland pond production***
- ***Recirculation systems***

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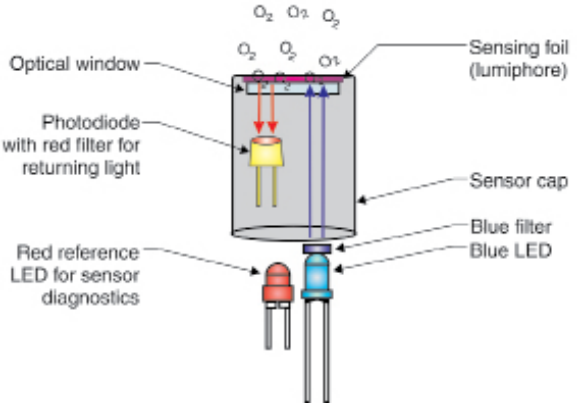
In-Situ® RDO PRO Sensor for Aquaculture

Specifications

RDO PRO sensor technology

The second generation RDO® sensor measures dissolved oxygen (DO) using the principle of "dynamic luminescence quenching." The RDO sensor uses lifetime-based optical fluorescence technology to provide an extremely stable, accurate, low-maintenance DO sensor.

The In-Situ RDO sensor measures the "phase" (or delay) of the returned signal compared to the excitation signal, and is thus based on the "lifetime" rather than the "intensity" of the luminescence. The presence of oxygen in the foil quenches the luminescence and causes a phase shift in the returned signal, detected by the photodiode. The phase difference between the blue excitation light and the return red light is measured, and the result is used to quantify DO.

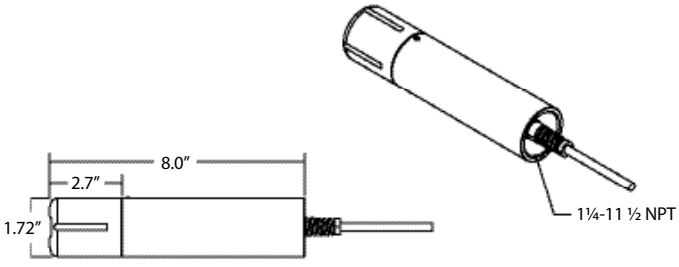


RDO® PRO sensor specifications

The RDO PRO sensor uses breakthrough technology to measure DO and offers rugged design, fast response, and simplified maintenance.

Sensor Type	Optical dissolved oxygen sensor
Range of RDO PRO sensor	0 to 20 mg/L concentration 0 to 200% saturation
Accuracy of RDO PRO	±0.1 mg/L, 0 to 8 mg/L (with user calibration) ±0.2 mg/L, 8 to 20 mg/L (with user calibration)
Range of thermistor	0° to 50° C (32° to 122° F)
Accuracy of thermistor	±0.1° C, typical
Response time, cap	T90: 30 sec T95: 37 sec @ 25°C
Resolution	0.01 mg/L
Usage life of cap	1 year from the first instrument reading
Shelf life of cap	24 months from date of manufacture *(install w/in 12 mo. of manufacture)*
Operating temp.	0° to 50° C (32° to 122° F)
IP rating	IP-67 with cap off, IP-68 with cap installed
Compliance	Heavy industrial, IEC 61000-6-2:2005
Storage conditions, cap	1° to 60° C (33° to 140° F), in factory container
Storage conditions, sensor	-5° to 60° C (23° to 140° F)
Salinity range	0 to 42 PSU, fixed or real-time capable
pH range	2 to 10 pH
Barometric range	507-1115 mbar, fixed or real-time capable
Max. power consumption	50 mA at 12 VDC
Warranty	**Sensor**: 3 years from date of manufacture **Cap**: 2 years from date of manufacture

RDO PRO sensor dimensions



RDO PRO offerings

- *Flexible power requirements—Uses 8 to 36 VDC input.*
- *Flexible, integrated open-architecture communication protocol—Includes industry standard Modbus communications over RS485, SDI-12 (version 1.3 communication protocol), or 4-20 mA 3-wire current loop.*
- *Compliance certified—CE, FCC Class B heavy industrial immunity and emissions certifications.*
- *Fixed 10-m cable or customer cable lengths are available with twist-lock connectors.*

In-Situ® Inc. 100% Wind Powered

CE FC

CALL TO PURCHASE

In-Situ Inc.®

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