



Portable RDO[®]X Optical Dissolved Oxygen Probe

THIS PORTABLE RUGGED DISSOLVED OXYGEN (RDO) PROBE USES THE LATEST AND MOST TRUSTED DISSOLVED OXYGEN (DO) OPTICAL TECHNOLOGY FOR MEASURING DO AND TEMPERATURE IN DEMANDING WASTEWATER AND DRINKING WATER PROCESS ENVIRONMENTS.



The Portable RDOX Probe allows wastewater and drinking water operators to monitor influent, effluent and treatment processes, responding quickly to oxygen and temperature changes to improve results.

LOW-MAINTENANCE OPERATION

- Operates with very low drift for long periods of time.
- Responds quickly and accurately to oxygen and temperature changes across the full range.
- Delivers consistent, reproducible results (<0.05 mg/L).
- No membranes or filling solutions needed.

INTEGRATED DESIGN

- Automates setup and reduces errors. Calibration coefficients are loaded into sensor cap.
- Incorporates In-Situ's latest RDO core technology renowned for its reliability, accuracy and durability.
- Common interface allows for use with mobile app and mobile devices.
- Use the In-Situ Wireless TROLL Com (sold separately) for connecting to a Bluetooth-enabled mobile device and the VuSitu[®] mobile app (required).

COST EFFECTIVE

- Twist-lock cable connection and quick-connect mount allows for interchangeability with all In-Situ probes.
- Easily view, store and manage data using the VuSitu mobile app
- Replaceable RDO sensor cap lasts up to 2 years.

RUGGED CONSTRUCTION

- Portable design allows for mobile spot checking at any location.
- Stainless steel housing, more resilient to harsh monitoring conditions.
- Slimline form factor for expanded access to monitoring locations.
- Resists abrasion and photobleaching effects.
- Withstands wastewater environments; inert, non-corrosive materials used to construct probe body and sensor.
- Insensitive to interferences that plague membrane-based sensors (hydrogen sulfide, chloride, ammonium, and others).

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Applications:

- MUNICIPAL WATER DRINKING SYSTEMS
- MUNICIPAL WASTEWATER SYSTEMS
- INDUSTRIAL WASTEWATER TREATMENT SYSTEMS

RDOX OXYGEN PROBE	
SENSOR TYPE	Optical DO probe
RANGE, DO	0 to 60 mg/L
ACCURACY, DO	±0.1 mg/L, 0 to 20 mg/L ±2% of reading, 20 to 60 mg/L
RESOLUTION, DO	0.01 mg/L
RESPONSE TIME, CAP	T90: <45 sec. T85: <60 sec. @ 25° C (77° F)
RANGE, TEMP.	0° to 50° C (32° to 122° F)
ACCURACY, TEMP.	±0.1° C (±1.8° F) typical
RESOLUTION, TEMP.	0.01° C (0.18° F)
SALINITY, COMP.	Fixed or real-time capable
BAROMETRIC COMP.	Fixed or real-time capable
METHODS.	EPA-approved In-Situ® RDO methods 1002-8-2009, 1003-8-2009, 1004-8-2009 Standard Methods 4500-O
ENVIRONMENTAL RATINGS	
PRESSURE	150 psi from 0° to 50° C (32° to 122° F); 300 psi @ 25° C (77° F)
DEPTH	210 m (689 ft) @ 25° C (77° F)
OPERATING TEMP.	Probe: 0° to 50° C (32° to 122° F)
STORAGE TEMP.	Sensor cap: 1° to 60° C (33° to 140° F), in factory container Probe: -5° to 60° C (23° to 140° F)
COMPLIANCE	Heavy industrial, IEC 61000-6-2:2005
IP RATING	IP-67 with cap off; IP-68 with cap installed
CHEMICAL RATINGS	
INTERFERENCES	Alcohols >5%; hydrogen peroxide > 3%; sodium hypochlorite (commercial bleach) > 3%; gaseous sulfur dioxide; gaseous chlorine. Do not use in organic solvents (e.g., acetone, chloroform, methylene chloride, etc.), which may swell the sensing element (foil matrix) and destroy it.
GENERAL RATINGS	
COMMUNICATION OUTPUT	Modbus/RS485, SDI-12, 4-20 mA
POWER REQUIREMENTS	8 to 36 VDC
POWER CONSUMPTION	Maximum: 50 mA at 12 VDC
CABLE LENGTHS	Modbus and 4-20 mA: Up to 1,219 m (4,000 ft) SDI-12: Up to 61 m (200 ft)
INT. MOUNTING	Twist lock female connector
WARRANTY	Probe: 3 years from date of shipment Cap: 2 years in typical applications

Specifications are subject to change without notice.

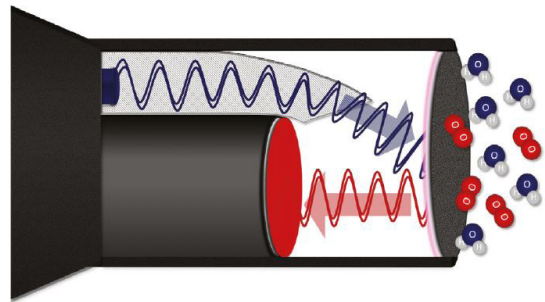
KEY ADVANTAGES

- **Long-lasting calibration**—The probe maintains calibration and operates with no drift over long-term deployments, delivering consistent, reproducible results.
- **Automatic setup**—The RDOX Cap is pre-loaded with factory calibration coefficients, serial number and manufacture date. Ships with the RDOX Cap.
- **Sensor health diagnostics**—Provides excessive-wear alerts and reminders for regular maintenance.
- **Fast response**—With patented signal processing, the probe responds quickly and maintains stability, even in dynamic conditions.

TECHNOLOGY

The low-maintenance Portable RDOX Probe measures DO and temperature with extremely stable, accurate results. When the probe initiates a reading, an LED emits blue light, which excites lumiphore molecules in the sensing element.

Excited lumiphore molecules emit red light, which is detected by a photodiode. Oxygen molecules quench the excited lumiphore molecules and prevent the emission of red light—a process called “dynamic luminescence quenching.” Determination of DO concentration by luminescence quenching has a linear response over a range of concentrations.



Lumiphore molecules are excited by blue light and then emit red light, which is detected by a photodiode. Optical electronics report DO concentration in mg/L.

OFFERINGS

- **Simplified integration**—Use in conjunction with VuLink telemetry systems and HydroVu™ Data Services.
- **Compliance certified**—CE, FCC Class B heavy industrial immunity and emissions certifications.
- **Twist-lock cable options**—5m or 10m lengths available.