

Технические характеристики

Кислородомеры Global Water

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WQ-FDO shown with stainless steel armor

Features

- Extremely fast and precise optical DO sensor – outstanding for field and lab applications
- Proven green light technology for long operation life of sensor
- Beveled membrane repells interference that can be caused by air bubbles
- Universal protective armoring available
- Low power consumption and low maintenance
- Simple to integrate and operate
- One year sensor life

Applications



Long and short term monitoring for streams, rivers, lakes, aquaculture, thermocline profiling, industrial outfalls, wastewater, scientific research, homeland security, the food and wine industry, and more.

Specifications

Output	SDI-12 or 4-20 mA (with converter)
Accuracy	1% of reading or 0.02 ppm, whichever is greater
Resolution	0.01% saturation, 0.001 ppm
Range	0.00 to 25.0 ppm
Repeatability	0.01 ppm
Response Time	90% in less than 60 seconds
Temperature Compensation	Compensated 32 to 122°F (0 to 50°C)
Sensor Drift	Less than 1% per year
Temperature	Accuracy: ±0.2°F (±0.1°C) Resolution: 0.02°F (0.01°C) Range: 32 to 122°F (0 to 50°C)
Depth Rating	Maximum 30m water depth
Operating Voltage	9 to 15 VDC
Current Draw	10 mA during measurement, 0.5mA standby

WQ-FDO Optical Dissolved Oxygen Sensor

Highly Accurate and Stable Optical Dissolved Oxygen Sensor

Description

The WQ-FDO Optical DO Sensor is an instrument designed for measuring DO concentrations in liquids. The optical DO sensors were developed to meet the requirements ranging from surface water monitoring programs to harsh waste water applications. The WQ-FDO has been specifically designed to meet the demanding requirements of the environmental monitoring and scientific research sectors, providing long term, accurate and reliable dissolved oxygen measurement. The sensor has extremely low power requirements and a 4-20 mA output making it ideal for incorporation into remote environmental monitoring environmental monitoring environmental for incorporation into remote environmental monitoring installations.

How it works

The WQ-FDO Optical DO Sensor's measuring technology is based on an attenuated fluorescent signal measured in a defined time frame. A fluorescent dye is stimulated in the sensor's membrane by a short wave length light source. By falling back into the passive state, long wave light is emitted, which is recorded as a measurement signal. If oxygen contacts the dye by diffusing through the membrane the period of back scattering light is shortened according to the oxygen concentration of the sample. The optical DO measurement is more or less a highly precision time measurement. In order to process this time measurement as precisely as possible, the sensor optics are calibrated to the speed of light.

Advantages

The WQ-FDO Optical DO Sensor has many advantages over traditional DO sensors. Unlike conventional Galvanic and Polargraphic

Sensor Construc- tion	Acetate, stainless steel, cast epoxy
Cable	4 core, 20 AWG, shielded, EPDM jacket
Size	1.89 inch dia. x 6.17 inch long (48mm dia. x 156mm long)
Weight	1 lb (453.5 g)

DO sensors, WQ-FDO sensors have no consumable cathodes or anodes that require replacement, minimizing servicing requirments. Neither do the sensors consume oxygen. Consequently the measurement of DO by the sensor is unaffected by water flow. The WQ-FDO can even be deployed in stagnate groundwater bores. The sensors also have extremely stable electronics – a calibration interval of 1 year is typical.

The measuring and reference path optical components are identically designed inside the sensor. Natural aging processes of the sensor's optical components can therefore be compensated by the reference path and accordingly compensated in the measuring path. As a result, the sensor provides accurate DO measurements over long periods of time without the need for re-calibration. Additionally by stimulating the fluorescent reaction in the membrane with low energetic green-light, the fluorescent dye in the sensor membrane won't be bleached out.

The WQ-FDO can be used to monitor DO in almost any liquid, including wines, beer, and milk. The sensors are not affected by color of the liquid and with the beveled membrane design, bubbles or aeration do not affect the sensor's measurements either. The sensors can also be mounted in process lines for quality assurance.

Ordering & Options

WQ-FDO Sensors

Order No.	Output Type
WQ-FDO	Includes 25 ft of cable. Does not include armoring.
201310	Replaceable Membrane
WQEXC	Extra Sensor Cable, per foot (up to 500 ft)
Accessories	
Order No.	Description

903030	Plastic Armor Housing	
903837	Stainless Steel Armor Housing	
Please call u	us for calibration standards.	

WQ401 Dissolved Oxygen Sensor

Rugged Dissolved Oxygen Sensor

Description

Global Water's WQ401 Dissolved Oxygen Sensor is a rugged and reliable water oxygen measuring device. The WQ401's sensor is attached to 25 ft of marine grade cable, with lengths up to 500 ft available upon request. The sensor's output is 4-20 mA with a three wire configuration. The sensor's electronics are completely encapsulated in marine grade epoxy within a stainless steel housing. The unit uses a removable shield and dissolved oxygen element for easy maintenance.

Record and Control

As with all of Global Water's 4-20 mA output sensors, you can add recording and controlling capabilities to the WQ401 with the GL500 Recorder and PC300 Controller. The GL500 (on page 122) connects to the dissolved oxygen sensor's 4-20 mA output to record data, and the PC300 Controller (on page 132) connects to the sensor's output to control pumps or alarms.

Specifications

Output	4-20 mA
Range	0 to 100% saturation, 0 to 8 ppm, temperature compensated to 77°F (25°C)
Accuracy	±0.5% full scale
Maximum Pressure	40 psi
Operating Voltage	10 to 36 VDC
Current Draw	15.5 mA plus sensor output
Warm-up Time	10 seconds minimum
Operating Temp	-40 to +131°F (-40 to +55°C)
Membrane	0.001 FEP Teflon (standard)
Combined Error	2% full scale
Size of Probe	Open Water: 1 ¼ inch dia. x 11 in long (3.2cm dia. x 27.9 cm long) Online: 2 inch dia. x 12 in long (5cm dia. x 30.5cm long)
Weight	1 lb (454 g)



Features

- Measure dissolved oxygen in situ
- Fully encapsulated electronics
- 4-20 mA output
- Marine grade cable with strain relief
- Stainless steel housing
- Replaceable dissolved oxygen element

Applications



Ideal for stream and lake monitoring, aquaculture studies, baseline analyses, mitigation monitoring, and other environmental applications.

Ordering & Options

Order No.	Description
WQ401	Dissolved Oxygen Sensor for Open Water (includes 25 ft cable)
WQ401-0	Online Dissolved Oxygen Sensor (with 1 inch NPT thread and 25 ft cable)
00-740	DO Element Replacement
WQEXC	Extra Sensor Cable, per foot (up to 500 ft)
Please call us	for calibration standards.



Why Measure DO?

Dissolved oxygen (DO) is the amount of oxygen (O_2) dissolved in water. DO provides one of the best indicators of the health of a water ecosystem, as oxygen is a necessary element for all forms of life, including aquatic life.

Oxygen enters water at the water surface through direct exchanges with the atmosphere. It is also produced as a byproduct of plant and phytoplankton photosynthesis.

A decrease in DO levels is typically associated with an organic pollutant. DO is used by plants and animals for respiration, and by aerobic bacteria in the process of decomposition. When organic matter (such as animal waste or improperly treated wastewater) enters a body of water, algae growth increases. As the plant material dies off and decomposes, dissolved oxygen levels decrease. If the water at the surface is not mixed with deeper water layers, the water's DO levels can become stratified. Dissolved oxygen levels can also vary according to the time of day, weather, and temperature.

DO in water can range from 0-18 parts per million (ppm), but most natural water systems require 5-6 ppm to support a diverse population. As DO levels drop below 5.0 mg/l, aquatic life is put under stress. As dissolved oxygen levels decrease, pollution-intolerant organisms are replaced by pollution-tolerant worms and fly larvae. If oxygen levels fall below 1-2 mg/l for a few hours, large fish kills can result.



Features

- Robust shock and water resistant design
- Easy to use interface
- Extremely long battery life

Applications



Ideal for fish farming, surface water, control measurements, wastewater treatement plants.

Specifications

Measuring Range (both meters)	O ₂ Concentration*: 0.00 to 19.99 mg/l or 0 to 90 mg/l
	O ₂ Saturation*: 0 to 199.9% or 0 to 600%
	Temp*: 32 to 221 °F (0 to +105.0 °C)
	* Depending on sensor
Resolution (both meters):	O ₂ Concentration: 0.01 or 0.1 mg/l (CellOx 325), 0.1 or 1 mg/l (DurOx 325)
	O ₂ Saturation: 0.1 or 1 % (CellOx 325), 1 % (DurOx 325)
	Temp: 0.2 °F (0.1 °C)
Accuracy (both meters):	O₂ Concentration: ± 0.5 % of measured value at ambient temperature of 41 to 86 °F (5 to 30 °C)
	O_2 Saturation: \pm 0.5 % of measured value when measuring in the range of \pm 10 K around the calibration temperature
	Temperature: ±0.1
Temp Correction	Accuracy better than 2 % at 32
	10 104 1 10 10 40 C)

OXI 3205/3210 Handheld Dissolved Oxygen Meter

Handheld DO meter for field measurements

Description

Useable anywhere, the Oxi 3205 and Oxi 3210 meters are robust, easy to operate and provide assured accurate readings. These meters have incorporated a sealed silicone keypad which offers real button response, yet allows for easy cleaning. In combination with galvanic oxygen meter probes DurOx® 325 or CellOx® 325 (no polarization time required) the meters are ready for immediate use anywhere, especially in fish farming applications.

Oxi 3205

This easy to use meter will meet all your day-to-day demands. It has a simplified keypad, with no memory function and no manual input facilities. When used in combination with the DurOx® 325 probe and its protective hood the handheld DO meter is particularly suitable for measurements in fish-farming applications.

Air Pressure Correction	Automatic through installation of pressure sensor in the range 500 to 1100 mbar
Operational Temp	14 to 131 °F (-10 to 55 °C)
Storage Temp	-13 to 149 °F (-25 to 65 °C)
Power	Four AA 1.5 V batteries or four 1.2 V NiMH
Battery Life	3205: Up to 1000 hours w/o backlight, 150 hours w/ backlight
	3210: Up to 800 hours w/o backlight, 100 hours w/ backlight
Dimensions (LxWxH):	7x3.15x2.17in (180x80x55mm)
\A/aimht	0.8816 (0.4kg)
vveigni	0.0010 (0.4kg)
IP Rating	IP 66/67
IP Rating Certification	IP 66/67 CE
IP Rating Certification DurOx 325-3	0.0616 (0.4kg) IP 66/67 CE
IP Rating Certification DurOx 325-3 Measuring Range	0 to 50 mg/l O ₂
IP Rating Certification DurOx 325-3 Measuring Range Electrode Material	0 to 50 mg/l O ₂ POM
IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material	0 to 50 mg/l O ₂ POM POM
Vergrif IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length	0 to 50 mg/l O ₂ POM POM 9.8 ft (3 m)
Vergrif IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length Temp Range	0 to 50 mg/l O ₂ CE 0 to 50 mg/l O ₂ POM POM 9.8 ft (3 m) 32 to 104 °F (0 to 40 °C)
Vergrin IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length Temp Range Min/Max Immer- sion Depth	0 to 50 mg/l O ₂ POM POM POM 9.8 ft (3 m) 32 to 104 °F (0 to 40 °C) 1.6in to 655ft (6cm to 20m)
Vergini IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length Temp Range Min/Max Immer- sion Depth Shaft Length	0. to 50 mg/l O ₂ P 66/67 CE 0 to 50 mg/l O ₂ POM POM 9.8 fr (3 m) 32 to 104 °F (0 to 40 °C) 1.6in to 65ft (6cm to 20m) 4.33 in (110 mm) w/hood
Veigni IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length Temp Range Min/Max Immer- sion Depth Shaft Length Diameter	0. 60 (0. 4Kg) IP 66/67 CE 0 to 50 mg/l O ₂ POM POM POM 9.8 ft (3 m) 32 to 104 °F (0 to 40 °C) 1.6 in to 65ft (6cm to 20m) 4.33 in (110 mm) w/hood 0.70 in (17.5 mm)
Veigni IP Rating Certification DurOx 325-3 Measuring Range Electrode Material Shaft Material Cable Length Temp Range Min/Max Immer- sion Depth Shaft Length Diameter Weight	0. 60 (0. Akg) IP 66/67 CE 0 to 50 mg/l O ₂ POM POM 9.8 ft (3 m) 32 to 104 °F (0 to 40 °C) 1.6 in to 65ft (6cm to 20m) 4.33 in (110 mm) w/hood 0.70 in (17.5 mm) 7.8 oz (220 g)

Oxi 3210

The compact precision Oxi 3210 enables you to carry out oxygen (DO) measurements rapidly and reliably. It provides the maximum degree of operating comfort, reliability and measuring certainty for all applications. Loaded with additional features, the DO meters include automatic temperature and air pressure compensation, salinity correction, GLP-supporting functions and built in datalogger. The meters also have auto ranging and auto read function, which checks the stability of the input signal, for ease of use and data reproducibility. The meters have a continuous measurement control (CMC) function that alerts you when your meter is reading outside of the calibrated range. The meter's large memory allows you to manually store 200 datasets.

Ordering & Options

Order No.	Description
Oxi 3205 Set	Handheld Dissolved Oxygen Meter DurOx 325 Set
Oxi 3210 Set	Handheld Dissolved Oxygen Meter CellOx 325 Set
CellOx 325-3	DO probe on 9.8 ft (3m) cable
DurOx 325-3	DO probe on 9.8 ft (3m) cable w/protective hood



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