Engineering Specification

DOX

Optical Dissolved Oxygen Sensor

The DOX is one of the most compact, durable, and user-friendly dissolved oxygen (DO) sensors on the market. It utilizes fluorescence quenching technology. Probes are direct-output digital sensors, delivering the precision of a controller and the accuracy of our core probes.

The DOX communicates via RS485 or Modbus protocols and outputs two (2) digital-based analog (4–20 mA) signals. These can be configured as any two of three options: percent saturation, concentration, or temperature. The sensor connects seamlessly to our MPX controller or directly to a PLC.

*Note: only one output can be connected when using the MPX.

Optical DO technology offers several advantages: it is inherently self-referencing, requires no warm-up period, does not depend on constant flow for stable readings, and is less affected by fouling. The DOX provides reliable readings within 90 seconds of going from dry to wet conditions. Its accuracy is further supported by a factory-programmed 90-point calibration stored on a memory chip embedded in the membrane cap.

The sensor membrane typically lasts one to two years and is inexpensive to replace. An intuitive Visual Lifecycle Indication (VLI) system alerts the user when replacement is needed, ensuring reliable operation. New membrane caps come pre-calibrated, allowing quick and simple maintenance—just install the new cap and the sensor is ready to use. When required, intermittent calibration can be performed easily on a controller or directly on the probe.

Simply put, the DOX, like all HF scientific Sensors, works when our customers need it to!

Features

- Dual 4-20mA Output
- Modbus Communication
- Output choice of:
- Saturation (%sat)
- Concentration mg/l (ppm)
- Temperature (ºC or ºF)
- No Electrolyte
- Sample Flow Not Required
- Very Rugged
- Visual Lifecycle Indication (VLI)
- Replaceable Membrane
- Saltwater Compensation
- Not affected by CO_2 or H_2S

Applications

- Aquaculture
- Fish Farms
- Industrial Wastewater
- Wastewater Treatment
- Sewage
- Boilers
- Horticulture

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

HF scientific product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact HF scientific Technical Service. HF scientific reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on HF scientific products previously or subsequently sold.

Specification

Call customer service if you need assistance with technical details.

Standard Measuring Range	0 - 60ppm 0 to 200%sat (up to 600%)
Accuracy at 25 0C DO (0-20 mg/L) (20-60 mg/L).	 ±0.1 mg/L ±2%
Temperature	± 0.1°C
Resolution DO Temp	 10 ppb (0.01 ppm) 0.01°C
Response Time	T90 < 45 seconds T95 < 60 seconds
Operation Temperature	-5 to 50°C
Depth Maximum Pressure	210 m (689 ft) @ 25°C 150 psi from 0° to 50°C
Storage Temperature	-40 to 65 0C
Salinity and Pressure Compensation	Fixed or real-time capable
Wetted Materials	cPVC Body, Cycoloy® (PC/ABS), Ryton® (PPS), PC/PMMA PVC*, Santoprene® 101-55* *when fully submerged
Power input	8 to 36 VDC
Power consumption	0.6W Max @12VDC 0.024W Idle @ 12VDC
Output	Dual 4-20 mA (current sourcing) Modbus/RS485 (All Models)
Mounting	1" MNPT on both ends
Ingress Protection	IP68

Related Products

ANALYZERS

1000003840	Multi-Input Controller
1000003559	MPX Dual-Input Controller* Only one 4-20mA input is supported

ACCESSORIES

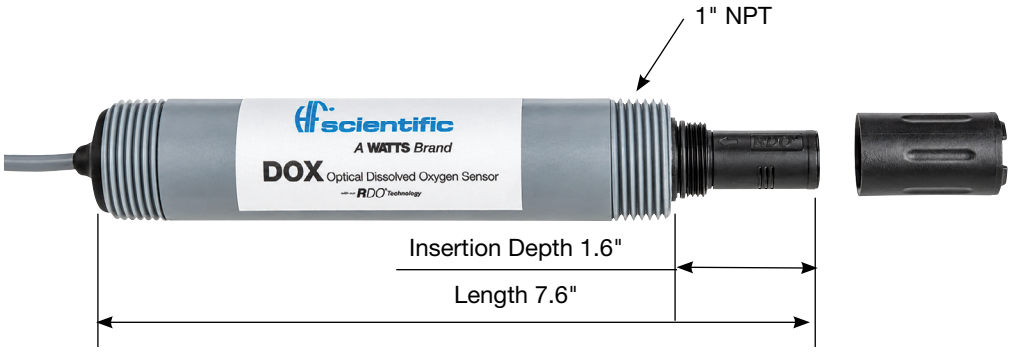
1000003931	Replacement Membrane Cap
1000003932	Calibration/Storage cap
1000003708	2" CPVC Tee with quick disconnect adapter

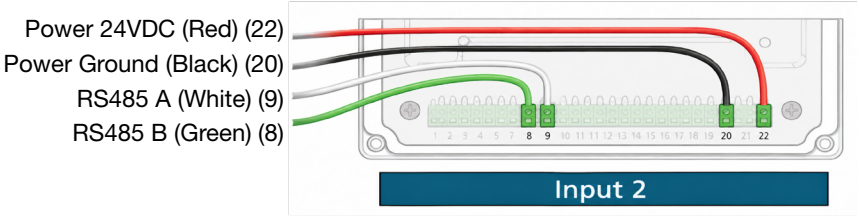
Ordering Information

STANDARD

1000003706	Optical Dissolved Oxygen Sensor with direct 4-20 mA output for ppm and %sat. 15ft cable

Dimensions





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