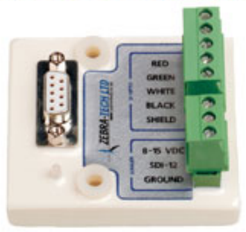
D-Opto

Optical Dissolved Oxygen Sensors

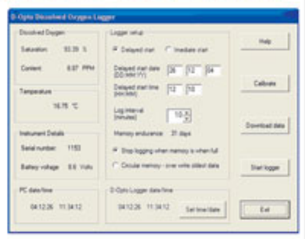
Interface for Sensor



D-Opto sensor is supplied with an interface board to simplify installation. The interface board features screw clamp terminals for connecting the D-Opto and power supply and data logger. The interface board also enables a laptop to be connected to the D-Opto WITHOUT having to disconnect the D-Opto from the

Software for Sensor

Software for Logger



Dissolved Oxygen

Accuracy	1% of reading or 0.02ppm, whichever is greater
Resolution	0.01% Saturation, 0.001ppm
Range	0.00 to 25.00 ppm
Repeatability	0.01ppm
Response time	90% in less than 60 seconds
Temperature	compensated 0 to 50 Deg c
Sensor drift	Less than 1% per year

Temperature

Accuracy	+/- 0.1 Deg C
Resolution	0.01 Deg C
Range	0 to 50 Deg C

Physical Specifications

Probe dimensions	48mm (1.89") diameter, 156mm (6.173") long
Logger dimensions	48mm (1.89") diameter, 220mm (8.66") long
Probe construction	Acetyl, stainless steel, cast epoxy
Ambient conditions	-40 to 55 Deg C, 0 to 100% humidity, 0 to 10,000 feet
Pressure rating	100 psi
Cable (sensor only)	4 core, 20AWG, fully screened, EPDM sheath

Electrical Specifications

Power requirement	
Sensor:	8-15 V DC, 0.2 mA standby, 12mA during sampling
Logger:	1 x 9 volt alkaline battery (PP9)
Protection	Reverse polarity, fully surge protected

Communications Protocols

- SDI-12 as standard and various digital or analogue output options
- User set address (0-9,A-Z)
- Maximum transmission distance; 350 meters (to confirm)
- RS232 communications between PC and interface board

Optional configurations

- User select cable length
- LCD display D-Opto logger, fully self contained with on-board battery pack
- Standard pipe thread mounting clamp
- DO-Cal Kit; mobile field DO calibration kit
- Optical isolation interface

Specification:

D-Opto Sensor

D-Opto Logger

ZEBRA-TECH LTD

www.zebra-tech.co.nz

Dissolved Oxygen Sensors

Highly accurate and stable
Very low maintenance requirements and costs
Flow insensitive technology, completely unaffected by water velocity
Low power consumption
Long calibration interval
Simple to install and integrate

D-Opto Logger

The D-OptoLogger is a fully self contained dissolved oxygen logger, incorporating an Optical DO sensor, battery, and low power data logger in a rugged compact underwater housing. The D-OptoLogger uses a field-proven solid-state optical sensing system to measure dissolved oxygen that is highly stable over long periods of time, even in harsh conditions. The data is stored onboard in non-volatile memory. The D-OptoLogger is setup, and data offloaded using simple Windows based software, supplied with the instrument.

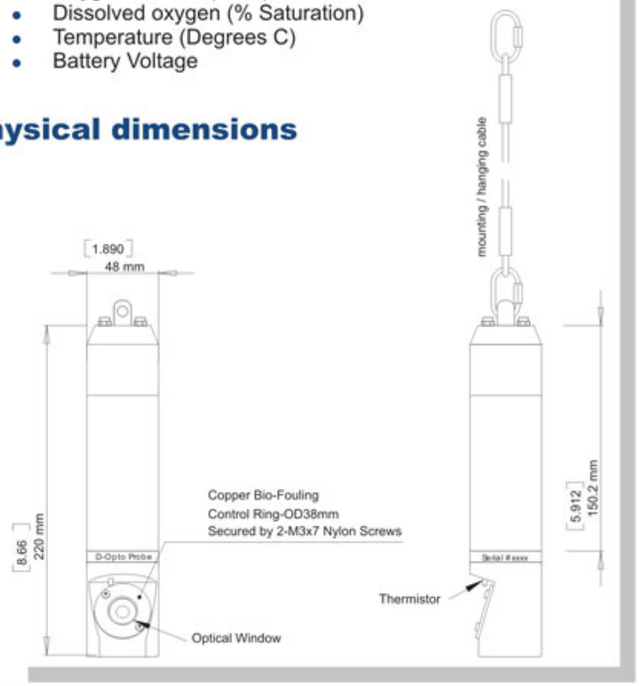
D-Opto Logger benefits

- Outputs temperature, percent saturation and ppm
- Long battery life from field replaceable 9 volt battery
- Copper bio fouling control ring around the optical window
- Windows software for sensor calibration
- Sensor life expectancy in excess of 5 years

The D-Opto Logger record set contains

- Time and date
- Oxygen content (PPM)
- Dissolved oxygen (% Saturation)
- Temperature (Degrees C)
- Battery Voltage

Physical dimensions



D-Opto Sensor

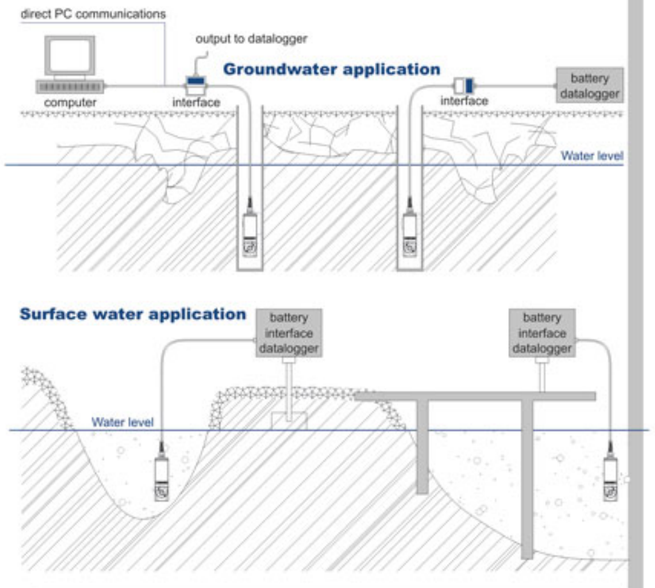
The D-Opto sensor consists of a probe that incorporates the dissolved oxygen sensing element, temperature thermistor, and processing electronics in a tough high impact resistant body.

All the calibration coefficients, serial number and SDI-12 address are stored on-board the probe in non-volatile memory.

D-Opto benefits

- Outputs temperature, percent saturation and ppm
- Digital output signal enables long cable run without signal deterioration
- SDI-12 signal output as standard
- Low power requirement; 0.2mA in standby, 10mA during sampling
- Reverse polarity and fully surge protected
- Copper bio fouling control ring around the optical window Highly flexible, abrasion resistant, fully waterproof EPDM jacketed cable
- Windows software for sensor calibration Interface board as standard for simple system integration
- Sensor life expectancy in excess of 5 years

Diagrams of applications



D-Opto sensing utilizes fluorescence to measure dissolved oxygen. A stable electronic circuit has been designed to firstly excite the ruthenium, then measure the intensity of the resulting fluorescence. Using this circuitry, D-Opto provides accurate dissolved oxygen measurements over long term deployments without re-calibration.