



Dissolved Oxygen Monitors

Partech Atlantic, 840 and 810 Systems

APPLICATION DATASHEET

AVAILABLE TRANSMITTERS

Atlantic Monitor
810 Transmitter
840 Transmitter

MOUNTING OPTIONS

Pioneer Probe Holder
Flowcell
Fixed Dip Tube

MEASUREMENT PRINCIPLE

Self Polarising Self Temperature
Compensating, galvanic, membrane
covered cell

FEATURES

Long life probe – 5 years+
Very low maintenance
Easy to calibrate

BENEFITS

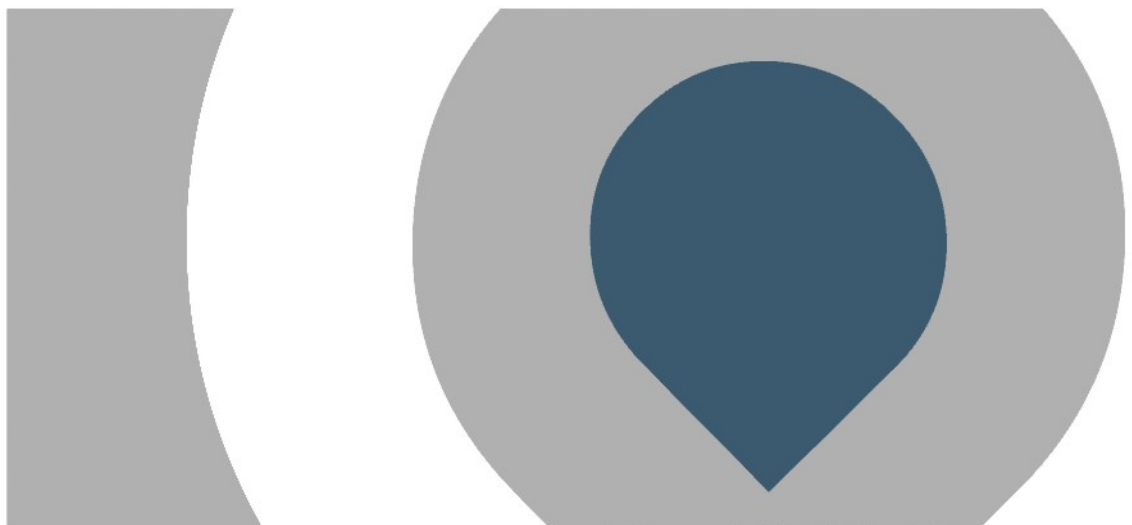
Improved Aeration Control
Prevention of Discharge Failure
Energy Savings



Being able to act on accurate measurements of Dissolved Oxygen in activated sludge plants will enable you to maintain levels of bacterial activity, avoid breaches in discharge consents and operate as cost effectively as possible. Too little dissolved oxygen can lead to bacterial inactivity and ineffective treatment, whilst too much, wastes energy and can cause unnecessary wear and tear to the aeration system.

Partech's sensors make accurate dissolved oxygen measurement easy. They are highly reliable and accurate as well as straightforward to use and easy to install. They also benefit from the self cleaning action of the Pioneer probe holder and the fouling tolerance of the probes themselves – all of which mean longer service intervals and a consistently more efficient plant.

The Oxyguard probe utilises a unique combination of electrolyte, membrane and anode materials, together these factors give a real world working life of in excess of five years. The only maintenance is occasional removal of fouling and calibration. Routine calibration is required for any instrumentation, without it there is no validation of the measurement. The Oxyguard probe is easily repaired on site without specialist training, the membrane is quick and easy to replace.



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Dissolved Oxygen Monitors Transmitter Options

PRODUCT DATASHEET



840 Transmitter

The 840 Transmitter is a loop powered device designed for simplicity of use, the system can be selected with ranges from 0-5 to 0-40 mg/l, or 0-5%Sat to 0-400%Sat. The only user requirement is to carry out periodic calibration.

In common with all the systems mentioned in this datasheet the probe will only need renovation if it is damaged, in most applications the probe life is in excess of 5 years. Even when it does not attention there is no need to dispose of the probe, simply replace the membrane and electrolyte.



810 Transmitter

The 810 Transmitter is a mains power version of the 840, retaining the simplicity of operation with only the addition of a control relay. Ranges are between 0-10 mg/l and 0-20 mg/l.



Atlantic Monitor

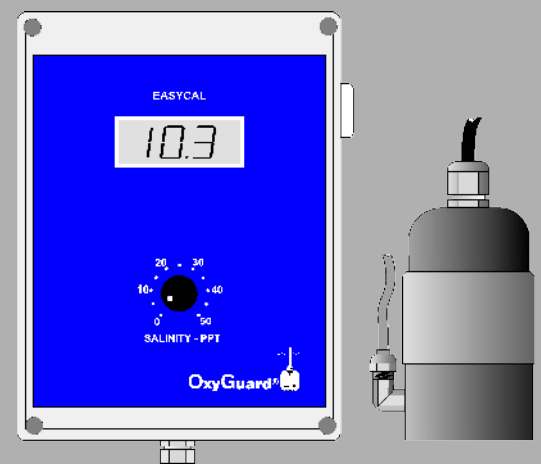
The newly introduced Atlantic has been designed for applications where the Dissolved Oxygen system is used to control a process or where the system is required to produce alarms at different levels. It has 4 relays and a 4 - 20 mA output, a 4 - 20 mA compensation input can be added. The Atlantic incorporates 8 alarm set points.

Calibration of the probe is done automatically and checked and validated by the system, the operator has only to remove the probe from the effluent, wipe it clean and leave it in air to temperature equilibrate. Once the temperature is stable press the button and the system completes and validates the calibration.

EasyCal Calibration Device

Designed to improve the simplicity and reliability of the calibration the EasyCal calibrates the probe at the point of measurement. This removes temperature as a variable which can have a very dramatic effect on the oxygen saturation in the air.

The Easy Cal fits over the end of the probe, the probe is returned to the sample and air is blown across the membrane by a pump mounted in the EasyCal this is left running for 10 minutes to allow it to temperature equilibrate with the sample and then the calibration is performed by either setting the system to 100 % or to the mg/l setting as displayed on the EasyCal.



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Dissolved Oxygen Sensors

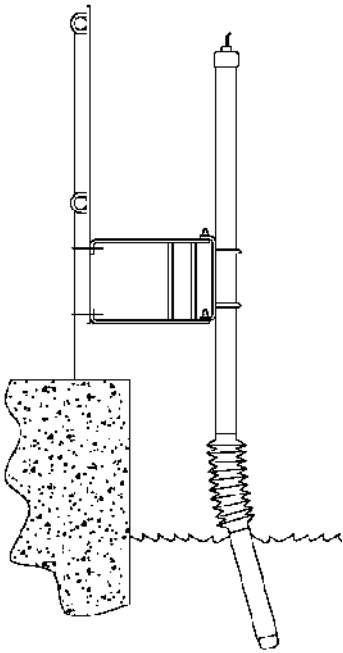
Specification and Mounting Details

SPECIFICATION SHEET



Probe Specifications

Measurement Principle	Oxygen: galvanic oxygen partial pressure cell, self polarising, self temperature compensating. Temperature: Precision NTC
Dimensions	Diameter: 58 mm Length: 59 mm
Weight	Probe only 0.2 kg Probe with 7 metres of cable: 0.5 kg
Connections:	Atlantic: 4 lead 840 and 810: 3 lead
Cable length (Std, other available)	Atlantic: 7 metres 840 and 810: 10 metres
DO Measurement Range	0 – 20 mg/l (ppm) 0 – 200% sat, (higher on request)
Temperature Range	from -5°C
Accuracy	Depends on calibration and conditions. Typically better than +/- 1% of value.
Output Stability	In air at constant temperature stable to within +/- 1% over 1 year
Accuracy Temperature	+/- 0.3C
Operating Conditions	0 – 40 C, Pressure to 2 bar. (higher on request)
Storage temperature	-5 to +60 C



Typical Installation with a Pioneer Probe Holder

Pioneer Mounting Bracket

The Pioneer mounting system has been designed to keep the DO probe in the optimum position within the matrix and provide a simple light weight and robust system to keep the probe clean and free of rags and other debris which slide off the shaft producing a self cleaning action.

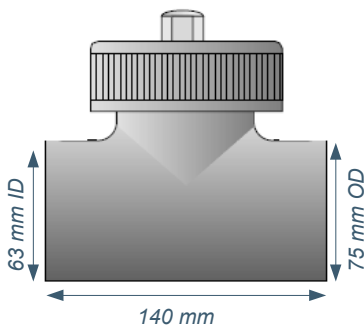
Fats and greases which are normally on the top of the sample tend to build up above the probe as it is mounted approximately 300 mm below the surface. An additional benefit of keeping the probe below surface is that it provides a more representative reading of the oxygen level in the tank, the surface being effected by rain and the natural tendency of oxygen to rise in the liquid.

Alternative Mounting Options

Where a dip probe is not appropriate, alternative mounting options are available, such as a full bore flow through cell.

Anti-Fouling Cap

The Oxyguard anti-fouling Cap inhibits growths on the membrane of the probe, especially in seawater applications. The cap is essentially the same as the normal cap, but is fitted with a cone made from a specially developed alloy. The cone surrounds the membrane and is effective in inhibiting marine organisms from attaching to and growing on the membrane



Flow Through T-Piece





Dissolved Oxygen Monitors

Specification Sheet

PRODUCT DATASHEET

	Model 840	Model 810	Atlantic
Construction	ABS enclosure with display	ABS enclosure with display	ABS enclosure with display, indicators, alarm buzzer
Enclosure Rating	IP65	IP65	IP65
Dimensions (wxhxd)	121x119x60	121x121x60	213x185x95
Supply & Consumption	Min 15VDC (max 50 ohm in loop) to max 35 VDC (max 1050 ohm in loop)	115, 230 VAC or 24 VDC (specify when ordering)	115 – 240VAC, or 9 to 36VDC: 10 W (specify when ordering)
Operating conditions	-10 to +50°C	-10 to +50°C	-10 to +50°C
Storage conditions	-10 to +60°C.	-10 to +60°C	-10 to +60°C
Humidity	Max 90% humidity non condensing.	Max 90% humidity non condensing.	Max 90% humidity non condensing.
Measurement inputs	From probe:mV oxygen signal, resistance temperature signal, scaleable ranges	From probe:mV oxygen signal, resistance temperature signal, scaleable ranges	From probe:mV oxygen signal, resistance temperature signal, scaleable ranges
Compensation input	n/a	n/a	4-20mA Scaleable. Max voltage drop 5V at 20 mA
Parameters	mg/l (ppm): % sat	mg/l (ppm): % sat	mg/l (ppm), % sat: % Vol, mBar O ₂ , Temperature
Analogue output	4-20mA. Max load 1000 ohm, fully galvanically isolated from all inputs	4-20mA. Max load 1000 ohm, fully galvanically isolated from all inputs	4-20mA. Max load 820 ohm, User selectable range & parameter; fully galvanically isolated from all inputs
Display	3 Digit	3 Digit	Graphical LCD with backlight, 4 Digit figures, 13 mm height
Relay outputs	None	1	4, with potential free changeover (SPDT) contacts (Direct or inverted) linked to parameter
Alarms	None	1	8, variable hysteresis about set-point
Response Time	90% of end value within 2 minutes	90% of end value within 2 minutes	90% of end value within 2 minutes

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The company reserves the right to alter the specification without prior notice. E&OE

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