

OxyGuard Atlantic *for Aquaculture*

Advanced Single Channel Oxygen Meter



OxyGuard reliability, accuracy and ease of use with advanced facilities

- Dissolved oxygen and temperature.
- Atmospheric pressure compensation.
- Analogue output.
- 4 relay outputs.
- 6 set points.
- 4 timers.
- Alarm buzzer.
- Logical linking.
- Can control aerators, stirrers etc.
- Easy set-up.
- Automatic self-check.
- Automatic probe check.
- Accurate, reliable probe.
- Long probe service intervals.
- Easy and inexpensive probe service.
- Anti-fouling cap available.

The **OxyGuard Atlantic** is an accurate, reliable and easy to use oxygen meter with features ideal for use in aquaculture facilities such as shrimp farms, carp farms and other installations with individual, large ponds. It measures both dissolved oxygen and temperature, and has 4 relay outputs. The dissolved oxygen measurement is compensated for atmospheric pressure, which permits accurate control of aerators.

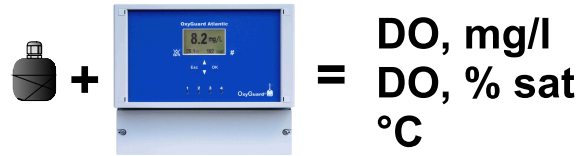
The user can link setpoints to parameters as desired. Setpoints can then be linked to output relays. It is also possible to link setpoints together. This permits, for example, an aerator to be started both from a DO setpoint and a temperature set point.

Let the Atlantic take care of your oxygen measurements!

The Atlantic for Aquaculture

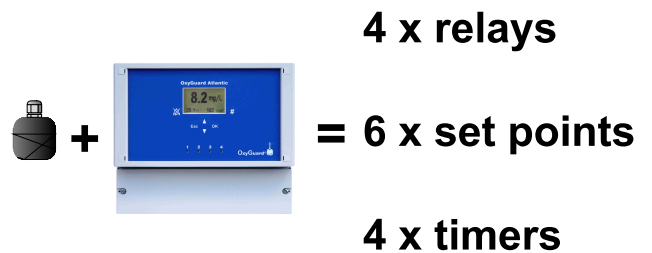
mg/l (ppm), % saturation and °C

Atlantic has a barometric pressure sensor, and the probe incorporates a temperature sensor. This gives you correct values of dissolved oxygen in both mg/l and % saturation. And, of course, you don't need a separate temperature measurement.



Safety First!

Atlantic has four relay outputs and 6 set points. There will always be at least one relay output that can be used to give alarm if the oxygen level goes too low or the temperature too high. And since Atlantic measures both parameters and has logical linking you only need to use one relay.



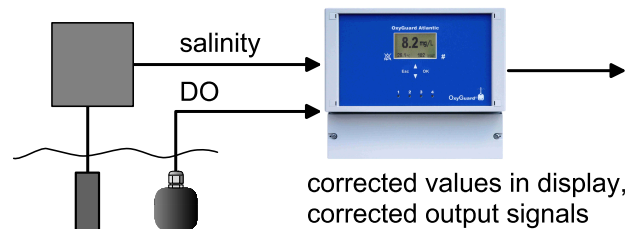
Timer functions

Atlantic has 4 timers that can be used for a number of purposes. For example, alarm can be delayed so that only a sustained fault results in alarm being given.

with Logical Linking!

Precise measurement in salt water

Most users will find the manually set salinity compensation in Atlantic sufficient. It is, however, possible to order Atlantic with a compensation input. You then just connect a conductivity meter and Atlantic will then compensate automatically.



Anti-Fouling cap

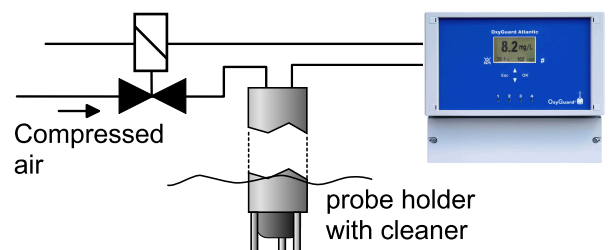
The OxyGuard Anti-Fouling Cap reduces membrane fouling significantly. Membrane fouling changes the sensitivity of the probe, and can otherwise be a problem in warm salt or brackish water.



The Anti-Fouling Cap helps keep the membrane clean, even in a shrimp farm!

Probe cleaner control

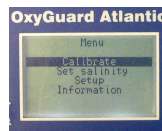
The OxyGuard Probe Cleaner uses compressed air, and has proved very effective. You can use a timer and relay in Atlantic to control the compressed air, and a second timer to "freeze" the output whilst cleaning.



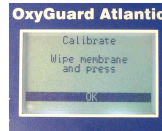
The Atlantic for Aquaculture

Automatic Calibration

Calibration with Atlantic is easy. Just wipe the membrane, place the probe in the air and start the process. The probe, as with all such probes, should be in temperature equilibrium with the air. Atlantic issues instructions in the display and will warn you if conditions are too unsteady to obtain a good calibration. The OxyGuard probe is designed to have the longest possible calibration intervals.



choose "Calibrate"



wipe the membrane and press "OK"



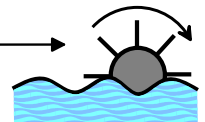
Atlantic will tell you when it has finished

Aerator control saves energy

You can save energy by letting Atlantic control your aerators automatically. They will then only run when more oxygen is needed. If you also use aerators for temperature control you can logically link a temperature setpoint and a DO setpoint so that the aerator will run if the DO is too low or if the temperature is too high.



Low DO = start aerator



Water circulation control

This can also save energy by ensuring that temperature control is only carried out when needed.

Atlantic can, for example, turn propellers on to mix warm surface water with cooler water at depth.

High temperature = start circulation



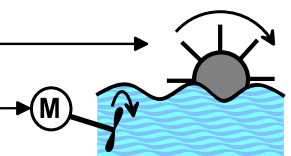
Link aeration and circulation

If surface DO levels are very high - above 100% sat, then it makes sense to start circulation propellers to send some of this oxygen rich water to lower levels. Starting aerators would only blow the excess oxygen away.

On the other hand, if DO levels are under 100% then aeration is sensible.

Atlantic can control both propellers and aerators. For example by aerating to high DO levels when the water is cool and the DO less than 100% sat, then maintaining circulation when the water warms and the oxygen level is pushed over 100%.

Atlantic can easily control both!



Specifications

Specifications - OxyGuard Probe

Measurement principle:	Oxygen: Galvanic oxygen partial pressure cell, self polarizing, self temperature compensating. Temperature: Precision NTC
Dimensions:	Diameter = 58 mm, length = 59 mm.
Weight:	Probe alone 0.2 kg. Probe with 7m cable 0.5 kg.
Connections:	Cable, 4 lead, standard cable length = 7 m.
Measurement range:	0 to 20 mg/l (ppm)/ 0 to 200 % sat, higher on request. Temp. from -5°C.
Accuracy:	Depends on calibration and conditions. Typical better than +/-1% of value.
Output stability:	In air at constant temperature stable to within +/- 1% over 1 year.
Accuracy, temperature:	+/- 0,3°C.
Operating conditions:	0 to 40°C, pressure to 2 bar. Higher on request.
Storage temperature:	-5 to +60°C.

Specifications - Atlantic Transmitter

Construction:	ABS enclosure with display, indicators, pushbuttons and alarm buzzer.
Dimensions & weight:	b x h x d: 213 x 185 x 95 mm, 1.2 kg.
Supply & consumption:	230 VAC, 115 VAC +/-10% or 9 to 36VDC. 10 W. Specify when ordering.
Operating conditions:	-10 to +50°C. Max. 90% humidity non-condensing. Enclosure IP65.
Storage conditions:	-10 to +60°. Max. 90% humidity non-condensing.
Measurement inputs:	From probe: mV oxygen signal, resistance temperature signal. Scaleable ranges.
Compensation input:	4-20 mA. Scaleable. Max voltage drop 5V at 20 mA.
Parameters:	mg/l (ppm); % sat; % vol; mbar O ₂ , temperature. Can be scaled and linked.
Analogue output:	4-20 mA. Max. load 820 ohm (total). User selectable range & parameter. Fully galvanically isolated from all inputs.
Display:	Graphical LCD with backlight. Max 4 figures, 2 decimals, 13 mm height.
Conversion accuracy:	To display and analogue output < +/- 0.1%. Non-linearity and repeatability typically < +/- 0.1% of actual value.
Relay outputs:	4, with potential free changeover (SPDT) contacts. Selectable mode (direct or inverted), and linking to parameter or logical argument. Max load 200VA or 1A AC, recommended max 24 VAC (abs. max 250 VAC). 2A at 24 VDC.
Logical functions:	Direct, inverted, multiply. With "and" and "not and" linking.
Alarms:	6, variable hysteresis about set point. Selectable parameter, values & linking.
Timers:	4, from 1 second to 999999 seconds (11 days). Selectable period, duty cycle and offset. Can activate or be activated by alarm. Can freeze the output. Can activate relays. Can be reset from front panel.

Ordering Information

B071A: OxyGuard Atlantic with probe for Aquaculture. Output 4-20 mA = 0-20 mg/l. Relay 1 active on low mg/l. Relay 2 activate on low % sat. Relay 3 de-activate on low % sat (or power failure.)

B072A: OxyGuard Atlantic with probe for Aquaculture. Version with analogue compensation input
Output 4-20 mA = 0-20 mg/l. Relay 1 active on low mg/l. Relay 2 activate on low % sat.
Relay 3 de-activate on low % sat (or power failure.)

Please specify operating voltage - 230 VAC, 115 VAC or 24 VDC.
STXWOHR Configuration to customer specification per hour.

I01FS: OxyGuard Fix-Mount Salinity Meter.

D10CAFADD: Anti-Fouling Cap fitted to probe.