

## Water quality measurement



### OxyGuard Stationary DO probes:

#### The Probe

The OxyGuard probe is the heart of each OxyGuard oxygen measurement system. A solid, reliable probe proven in fish culture and waste water treatment plants. The probe measures oxygen and temperature and therefore can be automatically calibrated. The cable of the probe can be elongated with almost any ordinary 4-wired cable, up to hundreds of meters. You no longer have to use tables, measure temperature or barometric pressure to ensure the greatest accuracy. Just place the probe in air, let it adjust to the air temperature and start the calibration routine. The system will inform you if conditions are not optimal for a good calibration.

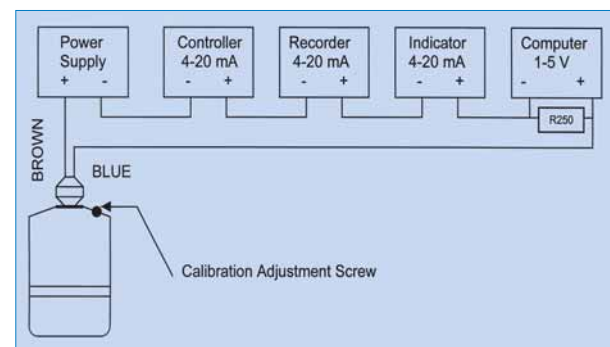
#### The probe, model 420

The OxyGuard probe, model 420 is a so called two-wire transmitter. (Power supply 17-32 VDC is required) Besides the components necessary for the measurement it contains electronics that convert the millivolts produced by the probe into a powerful 4-20 mA standard process output signal. The output is galvanically isolated from the input allowing an infinite number of probes to be used in the same water circuit. The advantages of the two-wire 4-20 mA technology (also available for temperature) is that the probe can be connected directly to a number of receivers, e.g.:

- alarm transmitters
- indicators
- controllers
- recorders
- most PLC systems
- PC systems with A/D input boards.

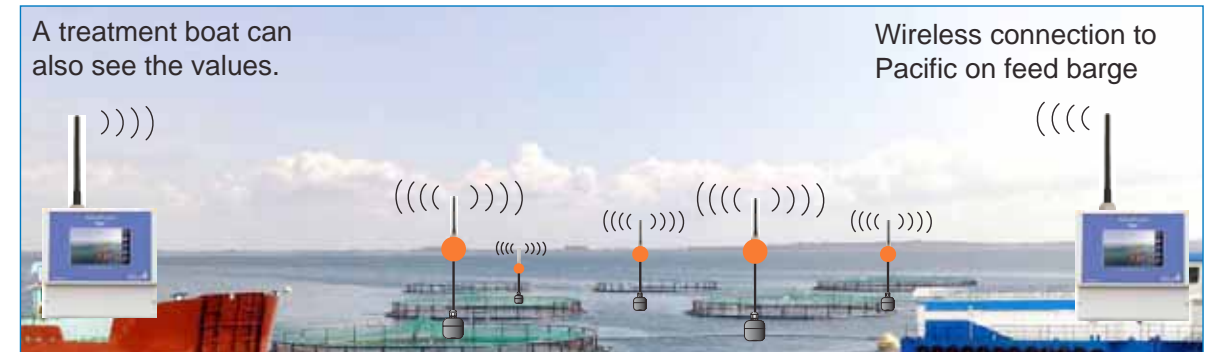


#### Connection example



### The wireless probe

The OxyGuard wireless probe opens a whole new range of possibilities for fish farmers, especially where the farm extends over a large area, since sections of the farm can be coupled to the Pacific or Commander system without having to install cables over long distances.



### OxyGuard Stationary systems

#### The Atlantic:

The OxyGuard Atlantic is a single channel oxygen control system with some advanced functions at a reasonable price. It has set points, timers and output relays that can be linked to obtain the desired function, as well as a current loop output.

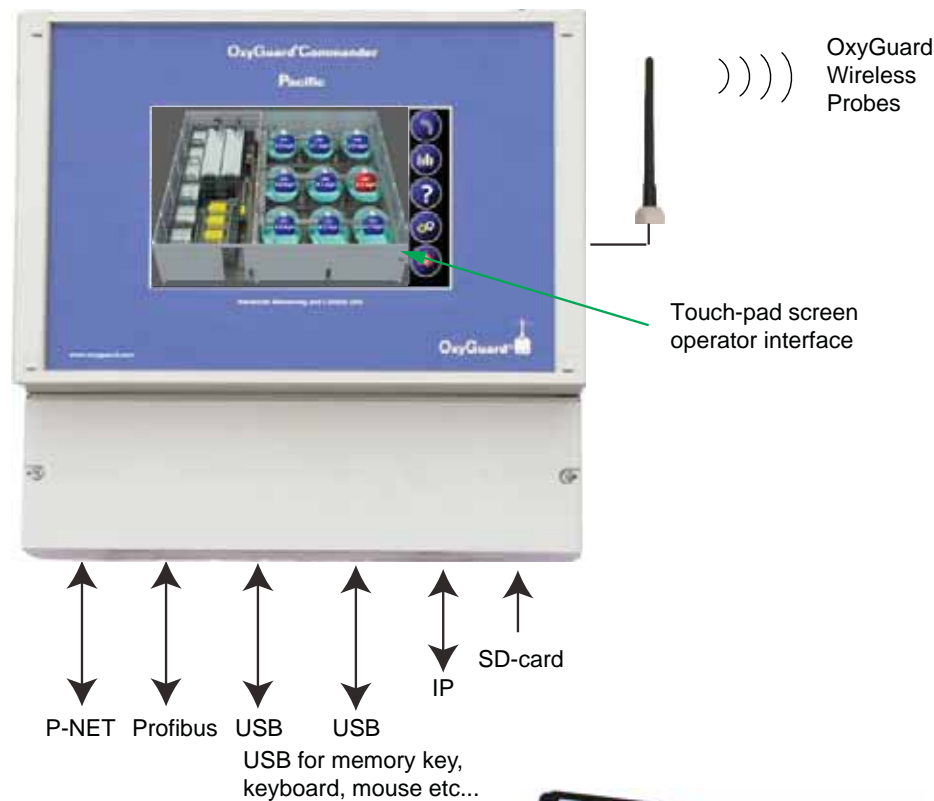


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### The Pacific

The OxyGuard Pacific connects up to 20 probes for oxygen and temperature, pH, Redox, Salinity, TGP and CO2. The system gives numerous options for input and output signals, even wireless radio options are available. The OxyGuard Pacific can be connected to a computer or be integrated in a Commander system.



### The CO2 stationary meter

The OxyGuard CO2-stationary meter is a unique product measuring the CO2 level in the water.



The OxyGuard waterquality measurement equipment has successful applications in fish farming, waste water treatment, food processing, pond and lake guarding, etc.

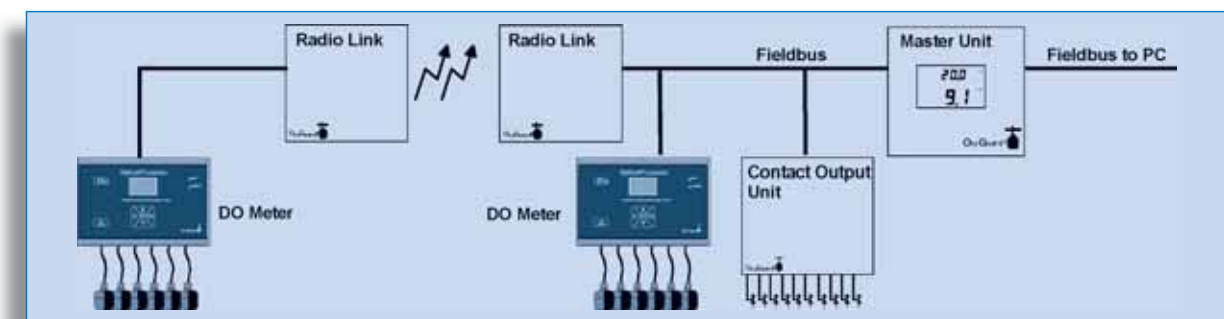
### The Commander

The OxyGuard Commander is a water quality metering, monitoring and control system with practically unlimited capabilities. The Commander combines newly designed input and output units and software with a tried-and-tested bus network to provide both small and large users with a very economic solution that is easily and precisely adapted to their exact needs. The various Commander input and output units and the flexibility of its software enable it to be used for most metering, monitoring and control functions found in a modern aquaculture facility.

Via a PC running the main Commander program, connection is possible both to other fieldbus systems and other computers. The latter can be performed through the office network or through the internet. A Commander System can thus become a part of the overall data system of the fish farm or mother company, enabling operation to be fine tuned to market demand trends to give a strategic advantage.



### Basic Commander Components Commander System Example



### Input from other equipment (pH, flow etc):

A variant of the 16-channel input unit accepts signals from other equipment with voltage or milliamp output. Any meter with a standard current loop (4-20 mA) or voltage output (e.g. pH meters, flowmeters etc.) can therefore be incorporated into the Commander system.

### Inputs from Level Switches, Alarm switches etc.:

A contact input unit enables the direct connection of this type of equipment. Just connect the contact between the two terminals for that particular input.



## Water quality measurement

YSI provides a wide range of handheld and stationary systems for metering, monitoring and control of various water parameters.

Special features of the YSI range are the Multiparameter options and Optical DO sensors. All handheld meters have a waterproof housing (IP67).

### YSI Portable meters:

#### ProPlus

The YSI Professional Plus handheld multiparameter meter provides extreme flexibility for the measurement of a variety of combinations for dissolved oxygen, conductivity, specific conductance, salinity, resistivity, total dissolved solids (TDS), pH, ORP, pH/ORP combination, ammonium (ammonia), nitrate, chloride and temperature. Also a very powerful lab instrument for BODs, pH and ORP.



*The compact bulkhead holds all sensors, so no changing of cables between measurements or entanglement.*



*Military-spec connectors on all cables*

#### Pro20.

The YSI Pro20 dissolved oxygen meter is a rugged, user-friendly instrument for dissolved oxygen measurement. The Pro20 can be used in the lab or the field.

- Measurement of oxygen and temperature
- 50 data set internal memory
- Galvanic or polarographic sensor
- Quick, one-touch calibration in 3 seconds!

Also available **Pro30** for salinity measurement and **Pro2030** for combined measurement of oxygen, temperature and salinity.



#### ProODO

The YSI ProODO optical dissolved oxygen meter measures oxygen optic! YSI ODO® technology reduces the time required calibrating and maintaining sensors while utilizing a user replaceable sensing element that requires approximately an annual replacement. There are no electrodes to clean or solutions to change.

Based on usage, calibrations can be stable for up to one year and are stored in each sensor.

- measures oxygen and temperature
- 5000 data set internal memory
- free software and pc connection tools!

#### DO200A

The YSI DO200A dissolved oxygen meter offers fast dissolved oxygen response times in wastewater, surface water, and aquaculture applications.

- Measures oxygen and temperature
- 50 data set internal memory



#### pH10A

The pH10A is the perfect instrument for economical spot sampling of pH and temperature in applications such as wastewater, surface water, aquaculture, hydroponics, pools, and education.

This ultra-compact instrument even includes a graphic display with on-screen instructions!

- 50-set memory (pH, temp, date and time stamp)
- User-replaceable single- or double-junction electrodes
- Automatic calibration and buffer recognition

#### 9300 and 9500 Photometers

The YSI 9300 and YSI 9500 are economical photometers in small packages for any application. These portable photometers allow you to easily take readings directly in the field for 100+ parameters.

Up to 500 test results are held in the 9500's memory along with a date and time stamp. Simply connect to a PC via USB and drag and drop the files to the PC.



## Water quality measurement

### YSI Stationary systems:

The stationary systems from YSI provide you with everything you need to monitor and control your facility year round.

#### 5400 / 5500D

The YSI 5400 and YSI 5500D are perfectly suited for continuous DO (dissolved oxygen) monitoring of multiple locations. Each instrument is capable of controlling 4 DO channels plus additional inputs for temp, level, pressure, CO2, TGP sensors, and more.

The YSI 5500D works with optical probes.

#### 5200 A

The YSI 5200A is a multiparameter instrument measuring simultaneously dissolved oxygen, pH, conductivity, ORP, salinity and temperature. This meter integrates process control, feeding, alarming, and data management into one product.

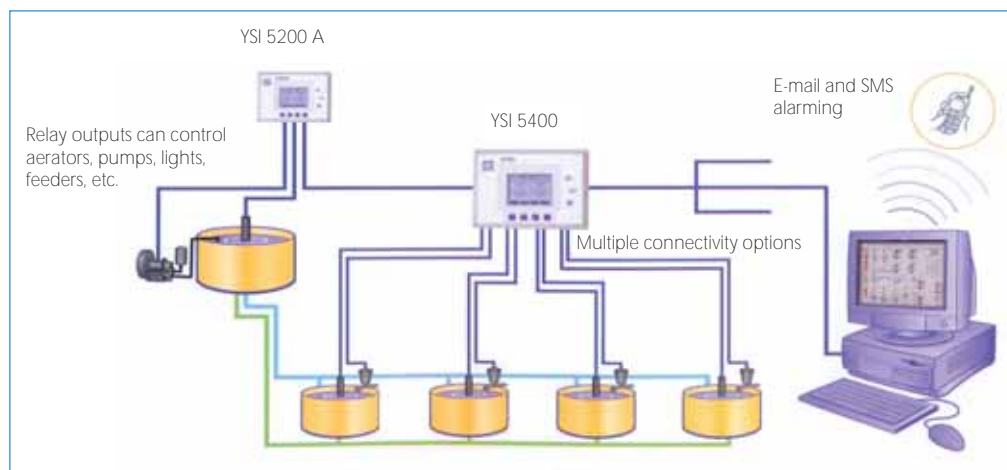
These stationary instruments can work together in a network up to 32 units.

AquaManager desktop software allows you to control and setup all parameter and system settings conveniently from one central location.

The powerful relay options can be used to control pumps, valves, feeders, alarms, etc.



*Instantly see an overview of your facility, manage parameter set points, and manage your data in order to make informed operational decisions in real-time.*



**Catvis BV can provide you with any YSI instrument, more examples of first class meters below:**

### The CastAway\* CTD

is a powerful and intuitive instrument that provides instantaneous profiles of temperature, salinity and sound speed.

Quickly collect data from any dock, bridge or boat with three taps of a magnetic stylus pen.

Simply drop the CastAway in the water, pull it up, and have conductivity, temperature, and depth (CTD) measured in minutes!

- GPS position, date, and time
- Fast sampling and sensor response
- Bluetooth wireless communication
- No user calibration needed
- No tools, computers, or cables required



For long term unmanned deployment, quick site surveys or permanent offshore monitoring the YSI sondes will provide you with all required data with one single robust sonde.

- Up to 9 optical sensors per sonde
- Multiple memory and power options
- Software calculates up to five additional parameters.
- Integrated wipers and copperalloy
- anti-fouling kits significantly reduce t thus extending your deployments ar

Other meters / systems that can be

- ORP meters in pen and handheld st
- Conductivity meters
- Vertical profiling systems
- BOD testing
- Laboratory equipment



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