

## Aqua-Control One

Compact monitoring system for single stationary oxygen measurement



Dryden oxygen probe



optical oxygen probe



230 V - Version with Dryden probe

The Linn company has manufactured effective oxygen monitoring and control systems with 4 or more probes for many years. During this time, our customers have often asked us to produce a reliable, but cheap device to measure dissolved oxygen in a single pond.

This new system, the Aqua Control One, is the answer!

It is delivered complete and ready for use. At the heart of the system is the control unit, which is enclosed in a splash-proof enclosure. This can easily be hung in the desired position. All that is necessary is to connect to the power supply (230 V 1 ph or 400 V 3 ph), and suspend the oxygen probe in the pond or water to be monitored. The display will show the current dissolved oxygen level, in percentage saturation, continuously. Aqua-Control One is now available with two different oxygen probes. In addition to the already well-known probe (Clark sensor with membrane and electrolyte), a version with optical oxygen probe is now available.

All probes are equipped with 5m cable and plug and can be quickly and easily connected to the system.



Once the probe has been calibrated in air (which only takes a few minutes) it is then submerged in the water to be monitored, and instantly gives a reading.

The electronics of Aqua-Control One contains two potential-free relay contacts which can be used to connect to an alarm

system and to control/switch a machine (e.g. water aerator or pump). A switched socket (230 V 1 ph) or CEE socket (400 V 3 ph) is already integrated - a device can be plugged in here, which is then controlled according to your wishes and the oxygen level in the pond.

400 V - Version with Dryden probe



Linn's Aqua Control One offers an inexpensive, ready-to-use, durable solution for the monitoring of dissolved oxygen and control of equipment in ponds. Also suitable and affordable for Hobby – and koi pond owners, with the reassurance that it has been field- tested by expert fish farmers.

Aqua Control One is compact and portable and therefore flexible. It can be moved around to where it is most needed at the time, if it is not possible to monitor every pond.

230 V-Version with optical probe





## Aqua-Control – Monitoring and Surveillance System

... Total control and increased safety in your fish farm  
... life insurance for your fish

### Aqua-Control

LINN Aqua-Control has developed to provide the complete monitoring/control/regulation of your fish farm - combined with complete software for all necessary data and readouts. The software is individually created by us for your farm from a variety of modules (e.g. module pond book or manual feeding). All changes in your farm are automatically recorded or can be easily and simply implemented with a mouse click!

The heart of the system is a programmable logic controller (PLC) from the industrial sector. The combination of different inputs from a modular system makes it possible to achieve almost any desired function. Each system is a bespoke solution created according to specific customer requirements.



Example of a screen view

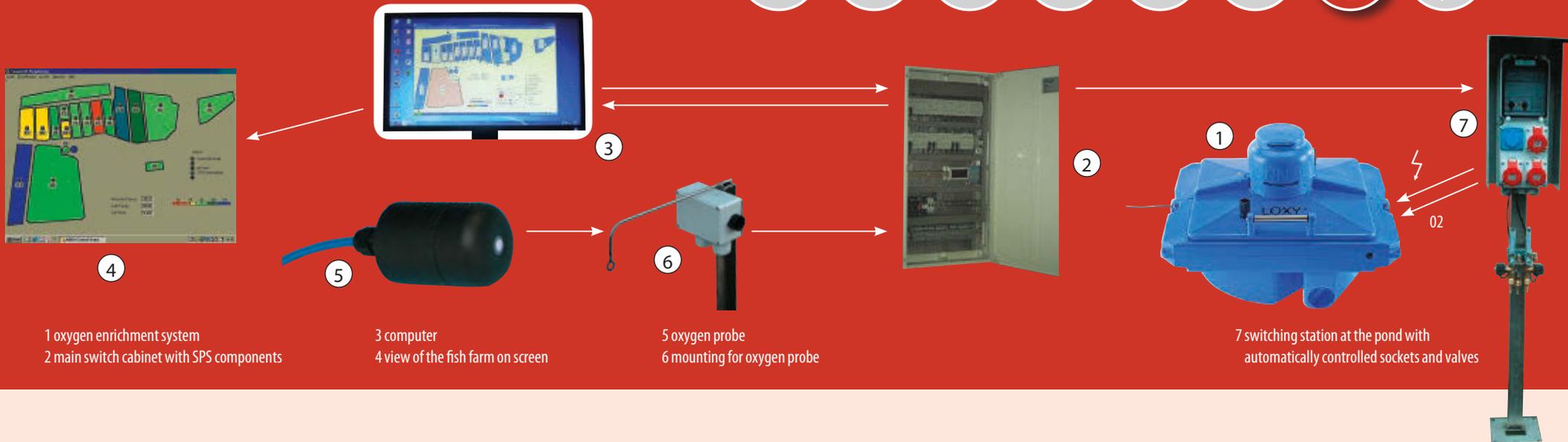
The main task of the control system is to keep the oxygen content at a pre-set level. The actual state is constantly measured by the probe hanging in the pond and compared with the target value. If the level falls below the set value, the oxygen enrichment or aeration system starts automatically and supplies oxygen to the water until the desired set value is reached again. If the oxygen content drops to the „critical value“, an alarm is triggered. The alarm message can be as provided as necessary eg. email/text etc.

In principle, any environmental factor that can be converted into electrical signals by means of probes or switches can be reported or directly triggered as a control measure. For example, the monitoring of water levels and/or the control of frequency converters are popular solutions for our customers.

Individual programmability of the control system allows all conceivable control operations to be carried out such as: cleaning screens every hour; pumping water from pond A to pond B every morning from 6 a.m. to 8 a.m., etc.

All Aqua-Control systems are equipped with a remote maintenance module. This makes subsequent adjustments or servicing easy and with no costly travel (by fitters).

The control system has a modular design. In addition to the actual "brain", which processes the program, smaller control boxes can be set up remotely across the site, which pick up probe signals and carry out switching functions. The connection between the switch boxes is made via a field USB similar to a type of telephone line.



This saves the laborious laying of large quantities of underground cables. Distances of several hundred meters are no problem, so that even large fishing enterprises can be economically wired.

A further advantage is the easy expandability of the control system. If, for example, new ponds are created, a further module is added to the PLC and the program extended accordingly. In this way, the equipment of a pond system can be divided into several construction stages at no extra cost.

The interface between man and machine is realized with a standard PC. The handling and adjustment is very simple. The PC is used to establish pre-set levels and to display the actual conditions. However, oxygen regulation is provided through a fail-safe system guaranteed at all times – even in the event of a “computer crash”!

In addition the computer serves also as long-term memory. By cyclically querying the values in the PLC, oxygen concentrations or temperature levels can be recorded over many years and displayed as a curve. The amount of data is small by today’s standards.

The main screen of the operating program is normally the visual display of your pond system.

The pond surfaces change their colour depending on the oxygen content, so that the condition of all ponds can be recorded at a glance. The current values are also listed. Switching states of pumps and valves can be displayed by different symbols.

Changes to the operating mode or target values can be made directly in the pond area with a simple mouse click. After confirmation, the new parameters are

transferred directly to the PLC and are active with immediate effect. All in all, operation is no problem even for computer novices.

**LINN Germany** is your partner providing solutions for all the control and safeguarding

requirements of complete production systems. The software has been created by us to meet your demands. Thus we can provide everything in one place. We are pleased to have provided more than 200 installations for our system Aqua-Control in Europe!

