AQUACULTURE|CONTROL
Multifunctional power aquaculture controller

One Controller all Tasks

- Sensor-based control (up to 6 sensors in one unit)
- Versatile output ports: 24 V DC, 4-20 mA, 0-10 V DC, 230 V AC
- Intelligent feeder and drum-filter control
- WLAN: alarm and surveillance online

FILTER | WATER LEVEL CONTROL | O₂ CONTROL | pH CONTROL | ORP CONTROL | CON / SAL CONTROL | TEMP. CONTROL | FEEDER | TIME CONTROL | WLAN

Why using control technology at all?

There are many reasons, why people use measurement and control technology in aquaculture. Besides an enhanced security created by an surveillance system, and beside the cost savings by using water, feed, oxygen or electricy efficiently, the creation of optimal condidtions for the fish is often the main reason for installing control technology. That´s also because perfect conditions are a prerequisite for healthy fish, which can fully use their growth potential.

Security   Cost savings

Control   **To experiment**

Documentation

Creating optimal conditions

Identifying bottle necks   Less manual work

Directing processes
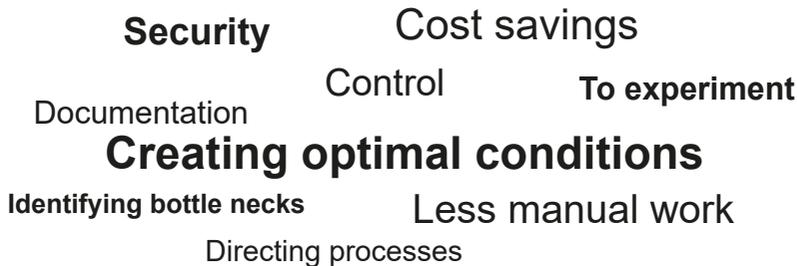
With the control system by SENECT you can build up your own individual measurement and control system by yourself.

By using plug connectors, we made it easy to connect sensors and actuator like solenoid valves for water and oxygen or automatic feeders. But also the operation by the user is made more comfortable: either at the control unit itself with its blue display or by using your smartphone, tablet or PC. With this, you are able to connect the sensors and actuators like you wish to realize the desired regulation mechanisms.

Another advantage of the SENECT control units: due to its embedded WLAN module, you can also connect many control units to one programm / app and operate the entire system with one device. But don´t be afraid in terms of security: even if the computer fails, every control unit is still doing its job! And this even without the use of data cables. And the WLAN connectivity is more than that: you can also have remote access to your measurement data and the system warns you with messages on your smartphone, if a warning is approriate. Hence, you can decide on your own, what to do. But you have knowledge of the actual conditions to make the right choice.

No compromises - the controller for all applications

In the AQUACULTURE|CONTROL-series, there are two basic types: the **"Basic"** and the **"Pro"**. Both types can be either bought with an 150 W or an 300 power adaptor.

AQUACULTURE|CONTROL

Basic

3 Sensor-input ports

3 Actuator-output ports

3 Schuko-230 V AC outputs

Pro

6 Sensor-input ports

6 Actuator-output ports

3 Schuko-230 V AC outputs

Powerful hardware

- Every type of Senect Sensor can be connected (e.g. O_2, pH, ORP, water level,...)
- Versatile actuator output ports with 24 V DC PWM, 4 - 20 mA, 0 - 10 V DC
    - --> Connection to PLC systems possible
    - --> Connection to actuators of other manufacturers possible, e.g. feeders or pumps (also via frequency converter)
    - --> Powerful: up to 5 A or 10 A output current at the High-Power-output
- 230 V AC output ports to connect consumers like pumps, motors or light directly

Clevers software - functions

- All functions can be switched on or off by using an active time window, like for example allow feeding only between 7 am and 6 pm
- Time-controlled output, either at individual time or in the interval mode
- Sensor-based control, e.b. by setting tresholds
- Control based on other actuators (e.g. lifiting the skimmer before starting to feed)
- Actuator ports also useable as alarm output, e.g. for connecting alarm lamps
- Intelligent feeder control (e.g. also with calibration)
- And many more...

Connectivity via WLAN

- Operation and surveillance by using smartphones, tablet or "normal" PCs
- Alarmmessages via internet e.g. on your smartphone
- Serveral control units can be controlled by one programm / app. That´s why also complex large systems can be displayed clearly and operated easily

+49 (0) 6341 - 95 95 210
info@senect.de
www.senect.de

Application example:

AQUACULTURE|CONTROL Basic for an hatchery

By using the **AQUACULTURE|CONTROL Basic** with only some sensors and actuators, you can not only monitor and surveill your hatchery - you can also regulate the most important parameters. For example:

- in case of low oxygen values,
    - the solenoid valve can be switched on and the oxygenation starts
    - the feeding can be stopped until the oxygen concentration is again above the lower limit

- the blocking of the outlet sieve can be recognized
    - by monitoring the water level
    - and in this case, the user can be alarmed per smartphone

Beside these functions, you can of course realize many different control and regulation tasks with the AQUACUTLURE|CONTROL Basic. You can for instance also use the time-control function to control the light or you can use the intelligent feeder programm to optimize the feed intake.


Light

Solenoid valve for oxygen

automatic feeder

water level probe

oxygen sensor
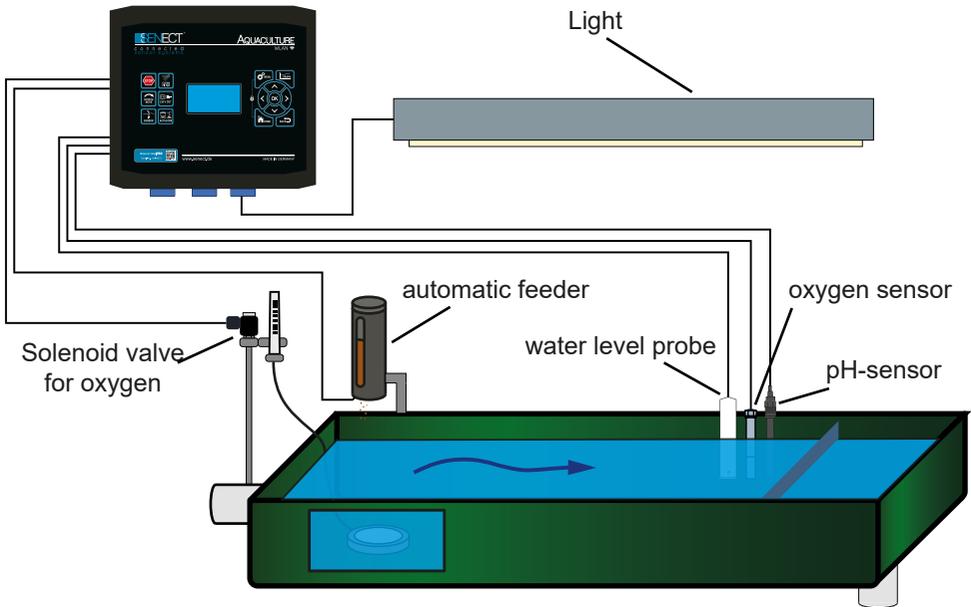
pH-sensor

Example: Monitoring and controlling an flow-through hatchery.

Application example:

AQUACULTURE|CONTROL Pro for a recirculation system

With the AQUACULTURE|CONTROL Pro up to 6 sensorss, 6 actuators and three 230 V consumers can be directly connected. That´s why you can also with only one control unit control all important processes in a small RAS. And for larger systems, you can simply use several control units.

Solenoid valve (water)

Drum filter

Circulation pump

Feeder

Solenoid valve for oxygen

Oxygen sensor
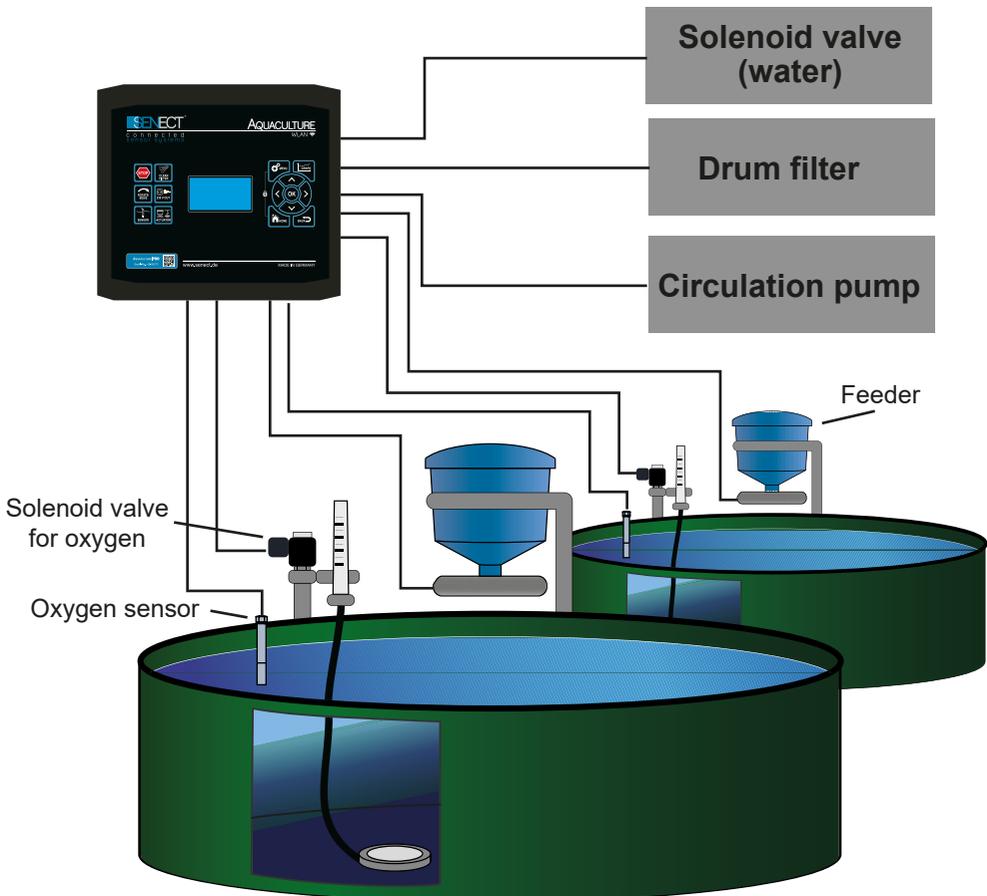
Example: Complete control of a reciculation system with only one control unit.

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AQUACULTURE|CONTROL Basic / Pro

Dimensions:	app. 260 x 228 x 127 mm
Voltage:	100 - 230 V AC / 50/60 Hz
Power consumption of unit:	max. 8-18 W (without plugged consumers)
Power of the 230 V output:	max. 2200 W altogether
Sensor-input ports:	Basic: 3 x Sensor / Pro: 6 x Sensor
Output ports:	1 x High-Power motor-output (24 V, max. 5/10 A)
	Basic: 2 x Actuators / Pro: 5 x Actuators
	3 x 230 V AC, individually fused
Signals of actuators:	24 V DC PWM, 0-10 V, 4-20 mA
Ingress protection:	IP54
Data transmission:	2.5 GHz WLAN
Options:	150 W or 300 W power adaptor
Equipment (examples):	Sensor water level probe PS (PS-300-MA)
	Sensor Oxygen O2S (O2S-20-SC)
	Sensor pH - XR1 (PH-410-XR1-SC)
	Power Switch SC24-230 (PWS-24230-SC)
	Solenoid valve water (MVW-M12-SC)
	Solenoid valve oxygen (MVO-M7-SC)
	Alarm lamp VIS-LED (VIS-LED-SC)

Art.-No.	Item	Scope of delivery
1400	AQUACULTURE|CONTROL - basic - 150 W	Control unit, manual
1410	AQUACULTURE|CONTROL - basic - 300 W	Control unit, manual
1500	AQUACULTURE|CONTROL - pro - 150 W	Control unit, manual
1510	AQUACULTURE|CONTROL - pro - 300 W	Control unit, manual

SENECT GmbH & Co. KG
An 44 - Nr. 11
76829 Landau / Pfalz - Germany

+49 (0) 6341 - 95 95 210
info@senect.de
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