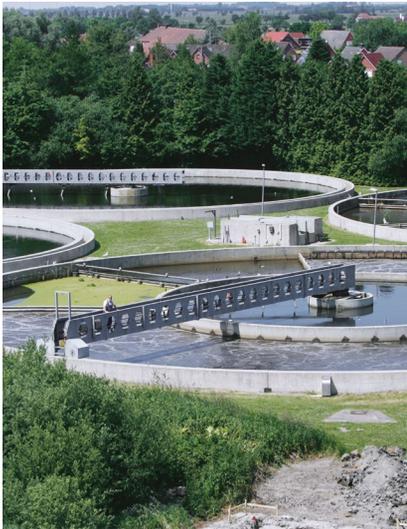




Reliable Performance.
Sustainable Results.

Intech Process Efficiency Aqualogic®

Achievement of maximum cleaning performance in sewage treatment plants, whilst ensuring high energy efficiency and process reliability.



Due to their transparent modular structure, Aqualogic® control systems by Aqseptence Group offer customized solutions to individual optimization tasks in the operation of wastewater treatment plants. In addition to the oxygen input control, which has been tailored to the needs of the aeration process, there are also a wide range of supplementary modules available (process water, precipitants, recirculation, sludge age, etc.).

Intech Process Efficiency Aqualogic® systems enable flexible use of the required measuring technology and achieve optimal discharge values coupled with very low energy consumption and reduced operational costs. Hundreds of wastewater treatment plants are already profiting from these advantages worldwide.

Function

The load fluctuates considerably in wastewater treatment plants as a result of customary daily use, seasonal influences, and commercial inflows, for example. Natural events, such as rainfall or periods of drought also lead to peak load and low load periods which call for flexibility of action. Aqualogic® control systems calculate the ideal regulation for individual operational units (e.g. blowers, pumps, penstocks) on the basis of Fuzzy Logic.

This mathematical method, which is modelled on our human way of thinking, can meet

the most diverse demands due to its creation of an ideal operational performance. The partially conflicting requirements of the various cleaning processes (nitrification, denitrification, Bio-P, sludge stabilisation, etc) can thus be optimally met and, for example, intermittent or continuous aeration achieved. The high level of transparency and ease of operation of Aqualogic® enable the user to adapt the system and include experiences previously gained.

Benefits

- Optimum cleaning performance
- High energy efficiency
- Maximum operational reliability
- Support for operating personnel
- Provisions for organic pollutants without additional sensor systems
- Modularly extensible
- Cost reductions

System variants

Aqualogic® is flexibly adjusted to both existing and desired measuring technology. Many operating companies opt for a regulation of oxygen input by means of the measuring signals oxygen, temperature, ammonium and nitrate. Further signals (such as e.g. influent volume, phosphate, filling level, etc.) can be practically integrated according to the specific application, in order to meet the

demands of more complex systems.

Moreover, the organic load can be determined by means of the integrated oxygen consumption controller and optimal carbon elimination ensured. A simple control variant based on oxygen, redox potential and temperature is also available for smaller plants.

Modules

Die Aqualogic® oxygen input control can be enhanced with numerous interlinked control modules depending on the specific requirements of the plant.

| | | |
|---|--|--|
| Enerlogic® Energy saving module for the biological stage | Process water management for appropriate dosing | Infeed control for biological filter |
| Sludge age control | Excess sludge control | Return sludge control |
| Load-dependent intermediate storage inlet | Recirculation according to demand | Bypass-control for primary settling tank |
| Precipitant dosage control for phosphate online measuring devices | Load-dependent precipitant dosage control without online measuring devices | Dosage of external C-, P- or N-sources |

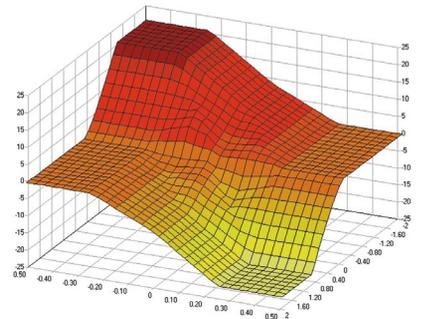
The supplementary module Enerlogic® enables, for example, a maximum saving of aeration energy coupled with efficient cleaning performance and stable plant operation. Amongst other things, the level of oxygen concentration in the aeration process is varied according to the load and the energy consumption is thus minimised. Therefore, many plants can be operated during

nightly low peak times or longer rainy periods with considerably less oxygen concentration in the aeration process.

Moreover, the dry solids content can be optimally adjusted automatically by means of the sludge age module and the oxygen input efficiency and digester gas yield thereby increased.

Performance & savings potential

A comprehensive analysis of the process technology of the plant is carried out, free of charge, prior to the optimisation measures. A package of targeted and coordinated measures is subsequently compiled which leads to an improved and stable operation of the plant with clear economic benefits. The installation of Aqualogic® can, therefore, often be financed through an increase in the cleaning performance, improved energy efficiency or state subsidies.

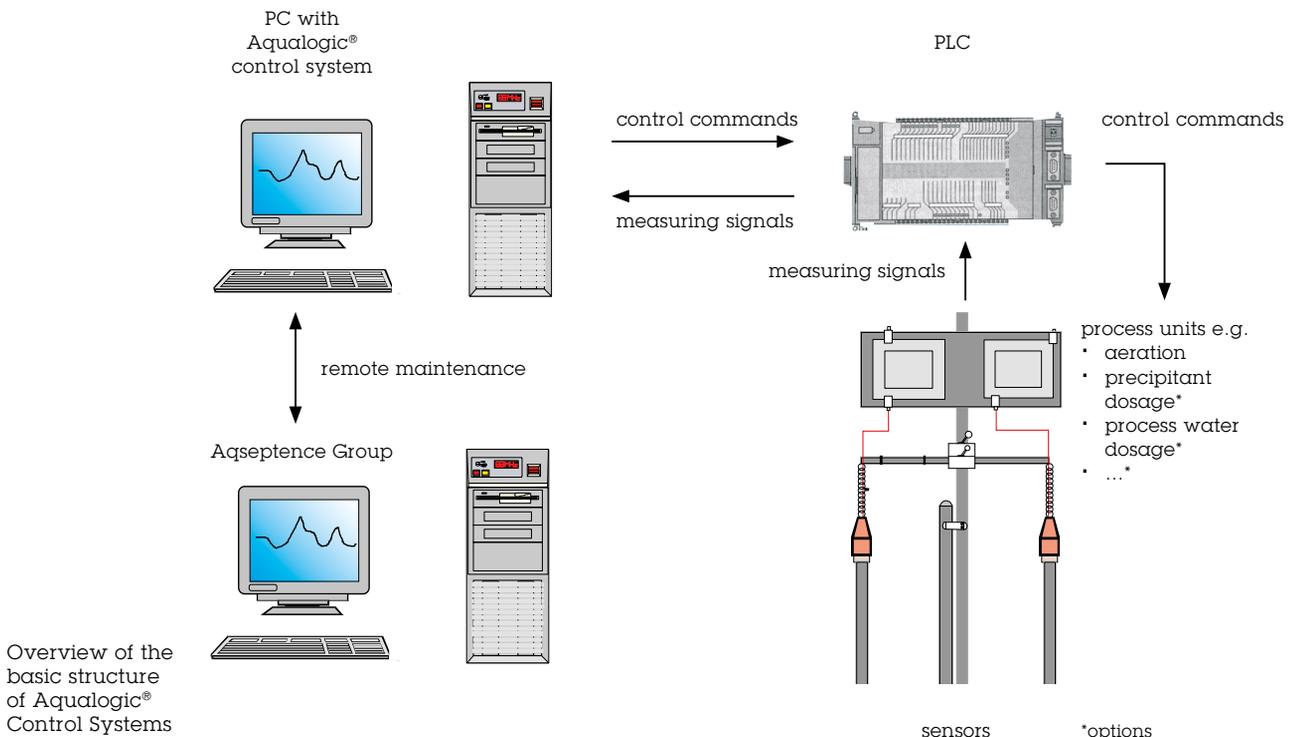


3-D performance characteristics of the Fuzzy Logic controller

Options & scope of installation

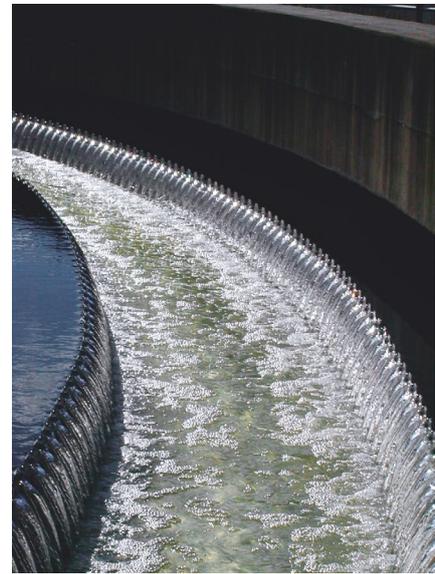
The scope of an Aqualogic® installation is determined by the requirements of the wastewater treatment plant and the wishes of the operating company. The Aqualogic® software can be installed on an existing process control computer and easily integrated in-

to the existing automation level of the plant. In addition to the software, complete system solutions can also include PC and PLC technology and also sensor, air blower, conduit and aeration technology.

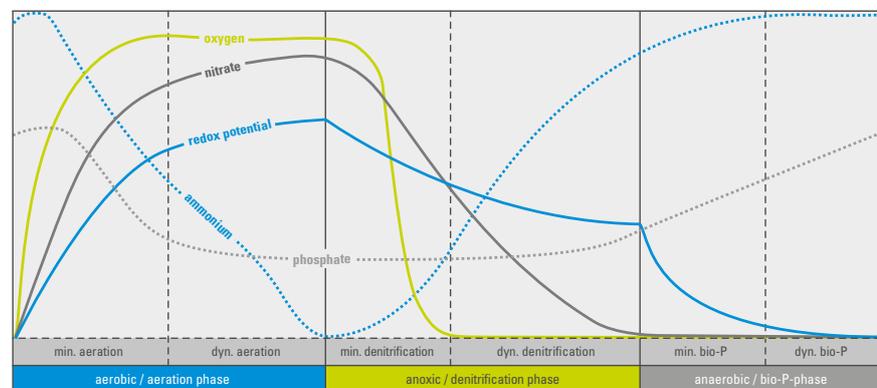


Applications & fields of operation

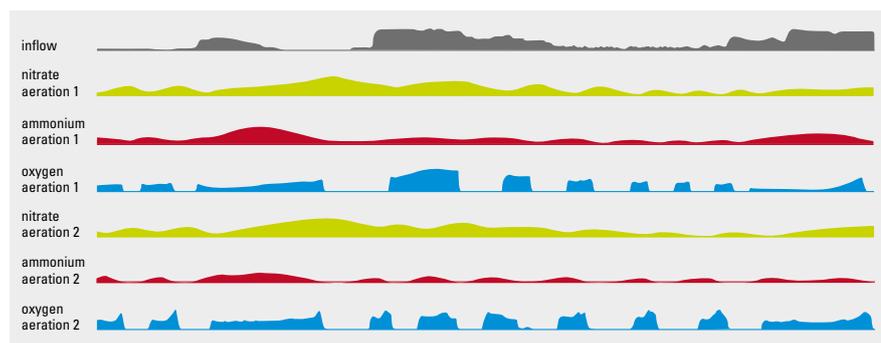
Almost every wastewater treatment plant with activated sludge processes can be equipped and optimised with Aqualogic®, regardless of the type of aeration or the size of the plant. This also applies to special types of plant such as cascade nitrification or SBR plants. Moreover, unused basins can be used as interim systems and oversized preliminary sedimentation can be partially bypassed. Peak loads are alleviated by the recognition of industrial peaks, the occurrence of rain and internal process waters.



Progression of various measurement parameters in intermittent operation



Daily chart



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The technical data stated in this brochure are indicative only and have to be determined for each individual case. Reserve technical changes.