

# Oxysmart

## Automation for small WWTP plants



# Chemitec Oxysmart

Proper management of the nitrogen and carbon cycles is crucial in order to achieve regulatory compliance without wasting resources and energy.

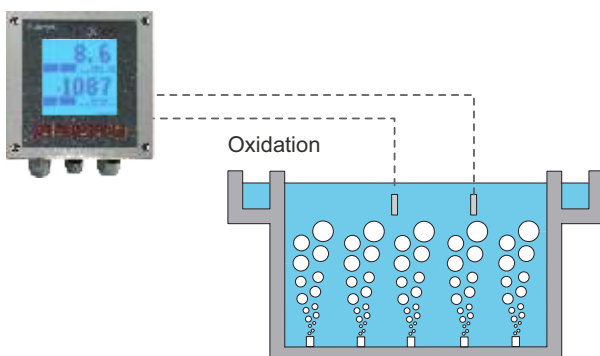
Oxysmart is a control algorithm. It is based on the proven theory that is possible, in a municipal treatment plant, to control the activated sludge treatment process by monitoring the concentration of ammonium.

Loaded on a 50-series Controller, this algorithm transforms the control unit into a system capable of managing compressors, VFDs and mixers, to optimize the process and adapt to load variations.

The Oxysmart 50-series is installed at the basin and is operational from the moment of installation. The logic is adaptable to any plant, regardless of the electro-mechanical equipment, to optimize the operation.

The OxySmart works by continuously adjusting the oxygen set-point based on the load and reduction of ammonium as detected by the included ammonium-ion selective S470/NH<sub>4</sub> probe.

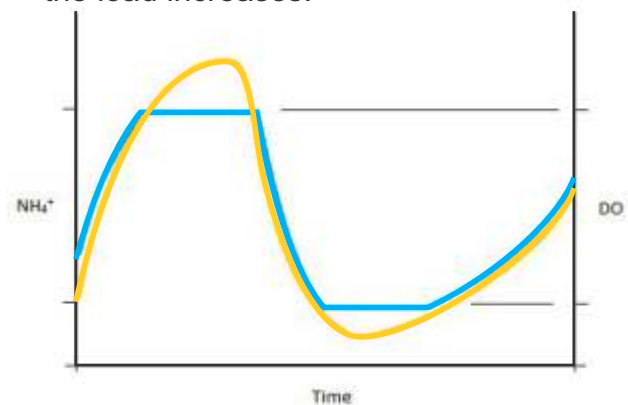
A Chemitec optical D.O. probe (also included) monitors the achievement of the target O<sub>2</sub> level.



Choose from one of three built-in logic models. There's one suitable for every kind of plant:

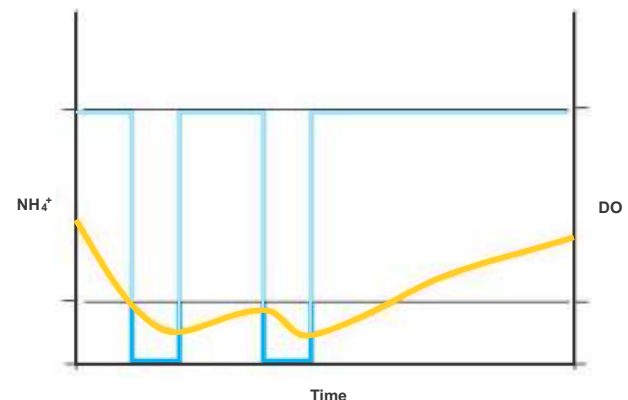
## Smart DO

In low load conditions the DO threshold is maintained at low levels. It then grows as the load increases.



## Smart ON/OFF

In conditions of low load, the system enters pause/work mode, ready to modulate the oxygen when the load increases.

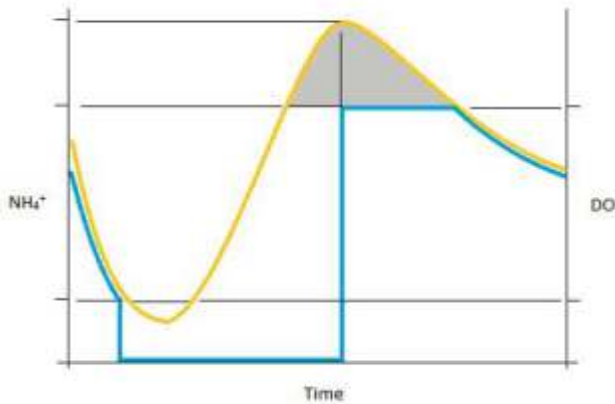


The market offers many dedicated solutions, with varying degrees of effectiveness, mostly targeting (and priced for) large-scale plants serving populations of 10,000 or more.

The Oxysmart provides a high performance solution, even for smaller plants where a large staff or integrated control systems may not be present.

### Smart N/DN

At the end of an aeration cycle, the system activates the mixer, turns off the compressors and waits for a peak of ammonia nitrogen; when the peak is reached, the Oxysmart reactivates aeration.



Oxysmart provides a range of security to protect the compressors and drives, as well as to compensate for a probe failure.

Alarm functions are provided in case of component malfunction, automatically adjusting the values to safety positions.

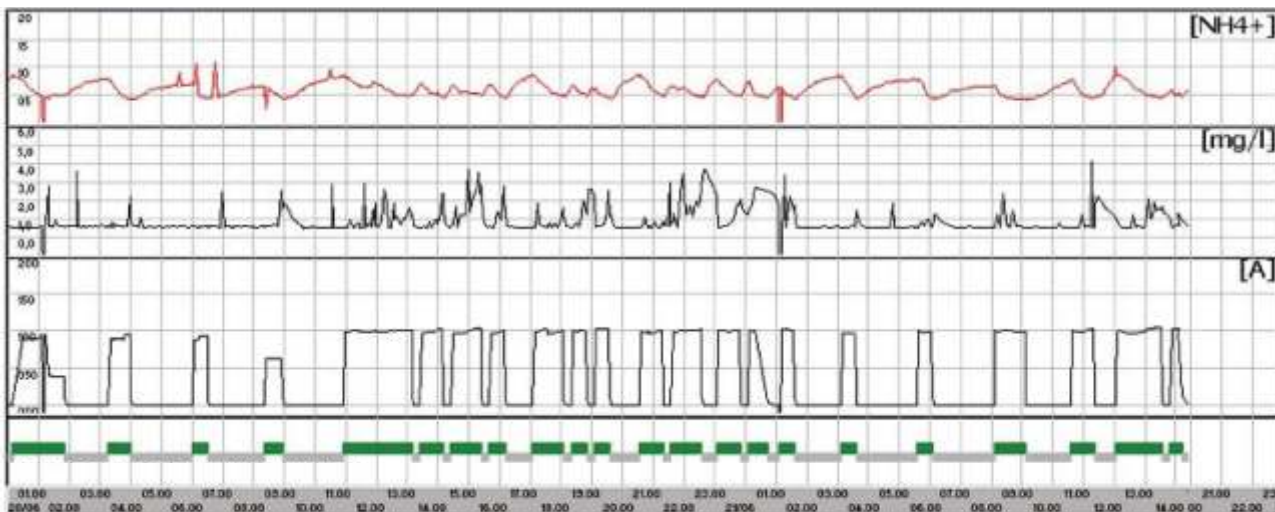
### Oxysmart Benefits:

**Economical:** High tech at a low price. Reduced cost of ammonia-nitrogen intervention.

**Simple:** Easy to install, immediately operational, and low maintenance.

**Advanced Control:** optimization of energy consumption, effluent stabilized for compliant ammonia nitrogen levels.

Operating example (Smart N/DN logic)





ISO 9001

Quality System Certification

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