

AMMONAIR®

Aeration control using ammonium

AMMONAIR® is a patented process for aeration control extended aeration activated sludge wastewater treatment plants.



AMMONAIR® and variable airflow production make it possible to:

- supply the process with the quantity of oxygen strictly required to treat carbon and nitrogen pollution,
- improve air diffusion efficiency in aeration tanks.

Since aeration is the main source of electricity consumption in this type of plant, the result is improved process energy efficiency, reduced operating costs and better control of nitrogen treatment.

FIELDS OF APPLICATION

- urban or mixed origin wastewater
- biological treatment through extended aeration using conventional free culture
- membrane bioreactor

PERFORMANCE

- 10 to 20% of electricity saving on aeration
- advanced nitrogen treatment

AMMONAIR®

ENERGY AERATION AND CONTINUOUS PROCESS CONTROL

The patented AMMONAIR® control algorithm has been developed by the Saur group to meet the objectives of improving the energy efficiency of wastewater treatment plants.

It's based on continuous analysis of the mixed liquor parameters in the aeration to accurately meet the biomass aeration needs.

The performance achieved through this air regulation is attributed to an algorithm that considers:

- Measurement of ammonium ion content NH_4^+
- Variation in this NH_4^+ measurement
- Control of residual dissolved oxygen

The ammonium (NH_4^+) sensor used in AMMONAIR® meets modern operating requirements, with low maintenance and excellent reliability over time. The associated measurement is therefore an ideal operating parameter for continuously monitoring the efficiency of treatment of ammoniacal nitrogen, a priority pollutant due to its toxicity on aquatic life.



Contrôle en continu de l'azote ammoniacal (sonde Hach Lange)

Continuous regulation of the ammonium concentration in the tank guarantees a lower residual concentration in the treated water than with conventional controls.

MULTI-PARAMETER & RELIABILITY

CHOIX OPÉRATEUR

SIMULTANEOUS NITROGEN / DENITROGEN

Algorithme AMMONAIR®
(O_2 / NH_4^+)

ALTERNANCE DE PHASES Mode classique

Algorithme REDOXAIR PLUS
(R_x / O_2 / NH_4^+)

MODES REPLIS Mode dégradé

Alternance de phases
(perte d'un ou plusieurs capteurs)

Nit. / Dénit. simultanées (Mode AMMONAIR®)

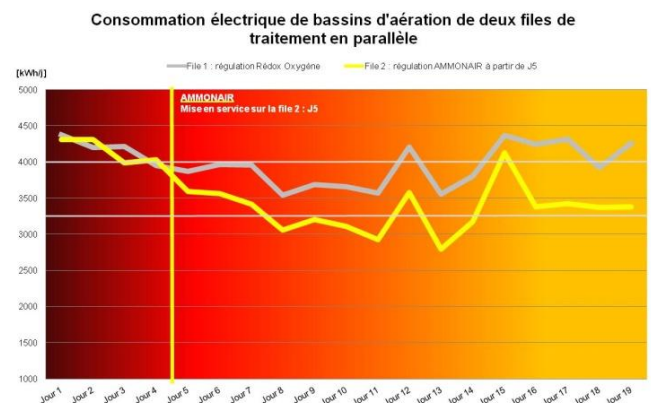
- Faible concentration en O_2 dissous (< 0,5 mg/L),
- Réduction poussée de la consommation énergétique

Alternances de phases (Mode REDOXAIR PLUS) :

- La mesure de l'ion ammonium pour ajuster la durée d'aération au strict nécessaire,
- La mesure de l' O_2 dissous pour contrôler l'intensité de l'aération,
- La mesure du potentiel redox pour ajuster la durée de non aération.

ENERGY EFFICIENCY

Operating with a very low dissolved oxygen content improves the overall oxygen transfer coefficient (OTC) in the biomass.



Reduced airflow operation to just what's needed reduces aeration density, improving oxygen transfer efficiency..



11 chemin de Bretagne
92130 Issy-les-Moulineaux
France
Tél. 33 1 30 60 84 00
602 011 918 RCS Nanterre