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Xylem Edge Control Ammonia + Nitrogen Removal

Xylem Edge Control Ammonia + Nitrogen Removal enables the AvN® wastewater treatment process to help optimize total nitrogen (TN) and ammonia removal while reducing overall energy use.

Ammonia + Nitrogen Removal is designed to benefit conventional activated sludge plants that:

- Target total nitrogen (TN) and ammonia removal
- Have high power costs and need to reduce OpEx

In addition to reliably meeting effluent limits, the AvN® process – in conjunction with simultaneous nitrification-denitrification (SNDN) – can deliver a biological outcome unlike anything the industry has seen.

An SNDN environment reduces OpEx through lower aeration (blower power) and maximizes use of organic carbon (reducing the need for carbon dosing), while retaining alkalinity. Under SNDN, the patented AvN® process can create a biological shortcut that expedites the denitrification process. This can result in energy savings and reduction in carbon.

How does it work?

Xylem Edge Control Ammonia + Nitrogen Removal uses an advanced algorithm that communicates with your existing hardware, such as PLC, modulating valves, airflow meters, and instrumentation, to achieve ideal conditions. This means you can optimize TN reduction as well as achieve ammonia limits.

Ammonia + Nitrogen Removal is built for versatility with our Xylem Gateway, which can operate with any PLC under various communication protocols using existing hardware. This makes it a quick, easy-to-install solution, requiring only:

- Airflow Meter
- Modulating Valve
- D.O. Probe
- Ammonia Probe
- Nitrate Probe

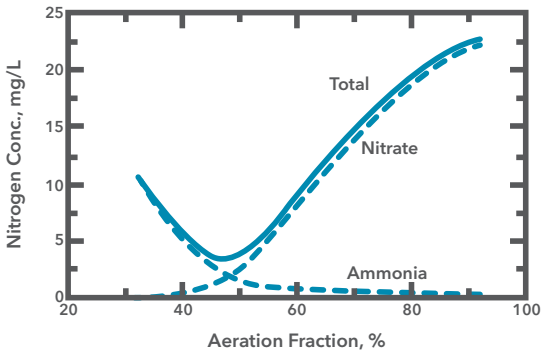
Your system integrator can configure the Xylem Gateway to talk to your PLC.

What can you expect from Ammonia + Nitrogen Removal?

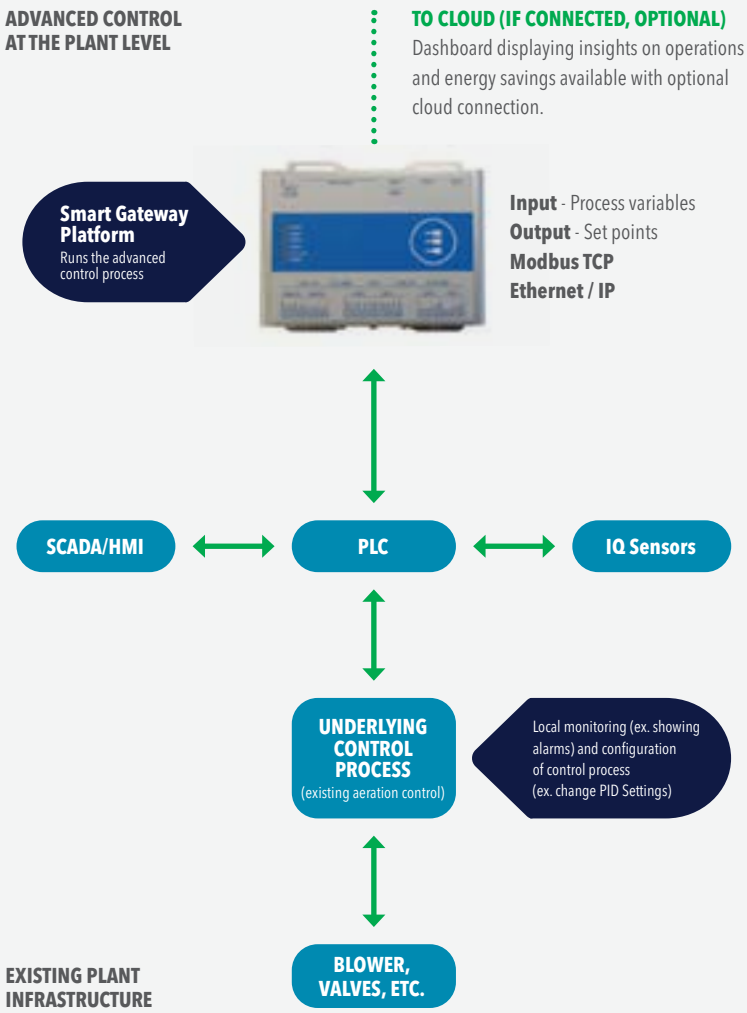
- Achieve TN and ammonia limits at lowest possible energy costs
- Reduced alkalinity, carbon and energy usage
- Minimal adjustment to your plant's existing footprint
- Aeration savings of 25% or more

The chart below shows how Ammonia + Nitrogen Removal uses aeration to balance nitrate and ammonia concentrations. Notice that the chart shows a threshold where both nitrate and ammonia hit the lowest possible concentrations relative to the amount of aeration delivered to the system. Communication between the nitrate, ammonia and D.O. probes maximizes TN removal and provides low ammonia concentrations.

Maximize TN Removal



Batchelor, B (1983). Simulation of single-sludge nitrogen removal. Journal of Environmental Engineering



About Xylem Edge Control

Ammonia + Nitrogen Removal is part of Xylem Edge Control, an off-the-shelf suite of digital solutions designed for conventional activated sludge (CAS) facilities to improve process control, save energy and reduce chemical usage. All Xylem Edge Control solutions include the option of a dashboard (requiring cloud connectivity). Dashboards provide useful data visualization such as plant performance, calculated energy savings, real time data trends, asset status and more. The Xylem Edge Control suite of products includes:

Pulsed Aeration	Ammonia Removal	Ammonia + Nitrogen Removal	Phosphorous Removal
A digital, energy-saving solution that prevents over-aerating while providing adequate mixing to improve the overall biological process in plants that see underloaded conditions.	Ideal for plants with an ammonia limit while also serving the need to save energy and other means of OpEx reduction.	Ideal for plants with both TN and ammonia limits seeking significant energy savings and other means of OpEx reduction. Ammonia + Nitrogen Removal utilizes the patented, one-of-a-kind AvN® wastewater treatment process.	Controls chemical feed pumps based on real-time phosphorus concentration to reduce chemical usage while meeting today's strict phosphorus limits.

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Learn more at xylem.com