

Xylem Edge Control Pulsed Aeration

When conventional activated sludge (CAS) plants are underloaded, they can become inefficient and mixing limited – a condition when excess aeration is required to achieve adequate mixing. This results in a significant waste of energy and increases the cost of operation.

Xylem Edge Control Pulsed Aeration is a digital solution designed to achieve proper aeration. By providing bursts or pulses of air based on real-time dissolved oxygen (D.O.) readings, it regulates mixing to ensure proper D.O. levels.

It is designed to benefit CAS plants that:

- Are often underloaded
- Face variations in loading (periods of low load)
- Have high power costs
- Have capacity of at least 1 MGD (3800 m³) per day

How does it work?

Xylem's Pulsed Aeration uses a special algorithm that communicates with your existing hardware to achieve ideal conditions. This solution is designed to control aeration assets, such as blowers and modulating valves. It does this by carefully ramping up and turning down airflow to create aeration bursts. Pulsed Aeration avoids on/off operation, which puts significant wear and tear on assets such as blowers and valves, and leads to excess maintenance or shorter equipment life.

Pulsed Aeration is also built for versatility with our Xylem Gateway, which can operate with any PLC under various communication protocols using your existing hardware.

This makes it truly a quick, easy-to-install solution, requiring only:

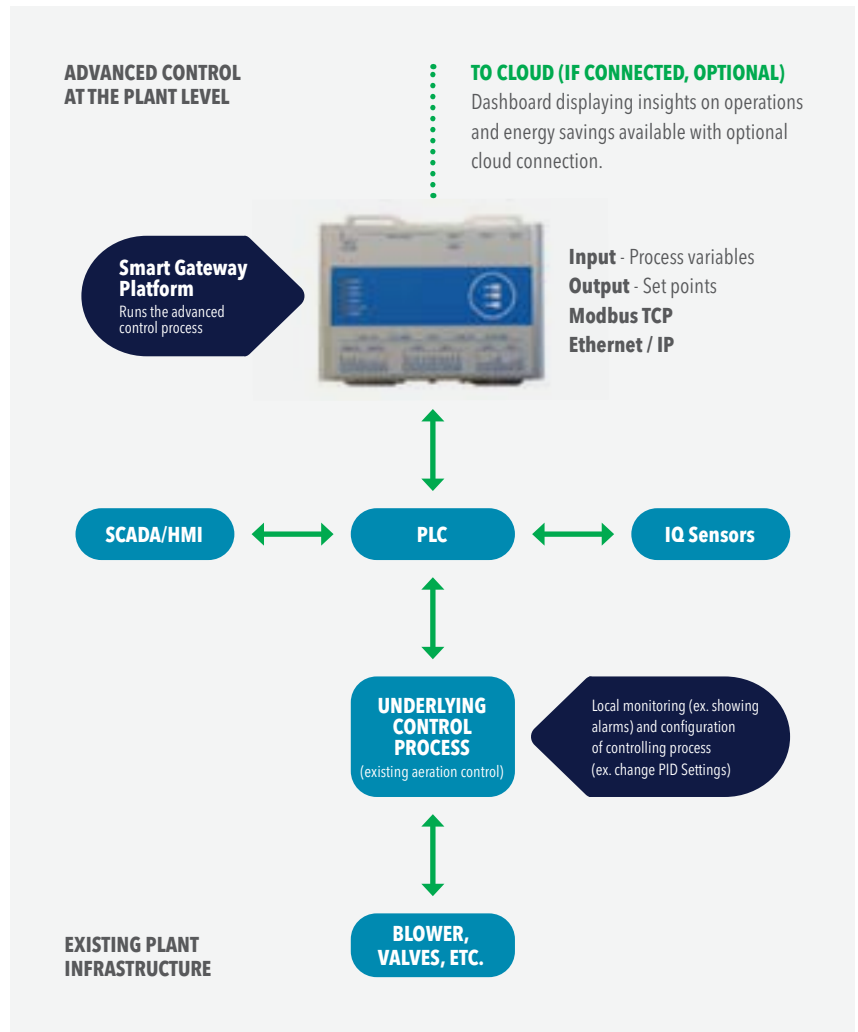
- Airflow Meter
- Modulating Valve
- D.O. Probe

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

Energy savings for cost efficiency and sustainability

With Pulsed Aeration, CAS plants can improve the quality of their bioprocess and realize energy savings of 25% by:

- Providing greater flexibility in the aeration process
- Consistently providing only the needed oxygen for the biology under varying conditions
- Keeping particles mixed and in suspension
- Improving nutrient removal by limiting the amount of excess dissolved oxygen recycled to anoxic zones
- Ramping up and turning down the airflow (avoiding on/off operations) to keep other plant assets (blowers and valves) healthy



About Xylem Edge Control

Pulsed Aeration 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 concentrations to reduce chemical usage while meeting today's strict phosphorus limits.



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