

RTC-N MODULE REAL-TIME NITRIFICATION CONTROL SOLUTION

Applications

- Municipal wastewater
- Industrial wastewater



Nitrification. Under Control.

Hach®'s RTC-N System optimises nitrification processes by adjusting DO concentration in real time through continuous measurement of ammonium load, allowing you to maintain consistent effluent ammonium values and enhance your DO control system for unprecedented energy savings. Designed specifically for continuously-aerated biological wastewater treatment plants, the RTC-N uses both an open and closed loop controller for optimal aeration control based on your desired effluent ammonium set-point.

Maintain compliance

Adjusting aeration based on real-time data makes your process more consistent. The RTC-N system continually monitors ammonia levels in your water and responds automatically to load changes, keeping your facility compliant. Controlling your process has never been so simple.

An off-the-shelf system

RTC is a plug-and-play system that is ready to use after a very simple set up. Minimal downtime is needed to install the system and once installed Hach will help you program your setpoints so you are fully prepared to monitor and treat your water in real time.

Save money on treatment

The RTC-N module is preprogrammed with algorithms that adjust blowers to maintain your desired DO setpoint. By treating only when needed, you save on energy costs.

Predictive diagnostics

Prognosis is a predictive diagnostic system that allows you to be proactive in your maintenance, by alerting you to upcoming instrument issues. Know with confidence whether changes in your measurements are due to changes in your instrument or your water.

When we say Service, we mean Service!

A complete Service package includes local field service experts to provide routine maintenance visits and warranty repair, plus a team of remote technical experts with the ability to monitor your system to ensure optimum performance. It's like having a Hach Technician right there with you at the facility.

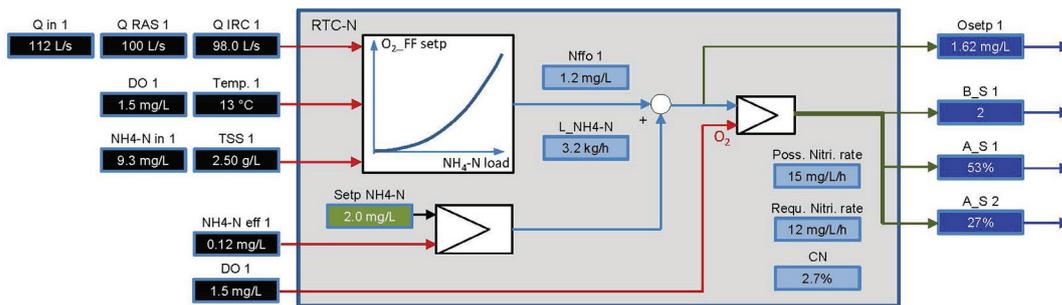
Principle of Operation

The RTC-N controller calculates the required oxygen concentration in the aeration basins to achieve a desired effluent $\text{NH}_4\text{-N}$ concentration in the effluent aeration. The RTC-N consists of a model based open-loop control based on the ammonium ($\text{NH}_4\text{-N}$) concentration in the influent to the nitrification zone, the flowrate to the nitrification zone, water temperature and total suspended solids concentration (TSS) concentration in the aeration basin. This open loop control is combined with a closed-loop PID control based on the Ammonium ($\text{NH}_4\text{-N}$) concentration outlet aeration. The PID-output values are combined with the model output to calculate the DO set point. The RTC-N considers the hydraulic retention time for set point calculation.

As an option an additional dissolved oxygen controller (RTC-DO) is able to activate up to six aeration devices in order to control a single DO concentration to the DO setpoint calculated by the RTC-N/DN.

If input signals like inflow, ammonium or suspended solids are not available the system automatically switches to fallback strategies.

The RTC-N control software can be combined with other control software modules and has to be hosted by a specific hardware.



Order Information

RTC-N Module

- LXV411** RTC-N Module, complete solution, incl. software & hardware. Control module for $\text{NH}_4\text{-N}$ - load-dependent O_2 control. Available as 1- or 2-channel version.
- LXZ519** RTC-N Module, software only. To be used with LXV515. Control module for $\text{NH}_4\text{-N}$ load-dependent O_2 control. Available as 1- or 2-channel version.
- An additional DO controller is available as option.
- LXV515** IPC Hardware

Please note: Using RTC Module requires SC1000 controller and RTC card.

Be certain in your control with a first class Service Partner. Be confident with Hach Service.

Hach's Commissioning Service for RTC provides the insurance that your complete Real Time Control solution is installed and configured properly as well as optimised efficiently. During the commissioning period (Start Up phase, Commissioning phase, Hand over phase), Hach will thoroughly monitor your system and review and analyse your data remotely in order to provide guidance to optimise your RTC at its highest performance and efficiency levels for your application.