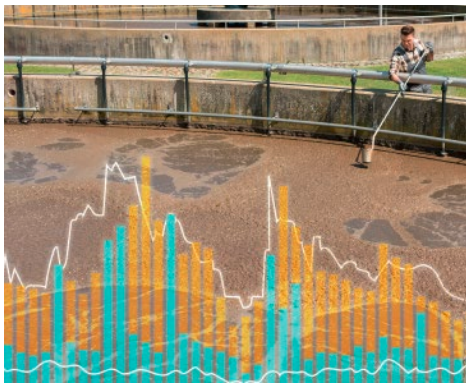
Aeration Optimisation for WWTP

RTC-N/DN on SC4500: the simple aeration optimisation for small and medium WWTP

Nitrification/denitrification under control





Maintain compliance

Controlling aerobic and anoxic cycles through continuous measurements makes your process more resilient. The RTC-N/DN system continually monitors the actual process conditions and responds automatically to load changes, helping you keep your facility compliant. Controlling your process and managing compliance risk has never been so simple.

Streamlined installation and reduced implementation cost

RTC on SC4500 effectively transforms a measurement device to a process support tool that is ready to be utilised after a very simple set up. The integration of the algorithms within the transmitter reduces the installation time and makes it easier to implement optimisations by brining together everything needed in a simple, compact solution. Once installed Hach® will help you program your setpoints, so you are fully prepared to monitor and treat your water in real time.

Reduced energy consumption

The RTC-N/DN module is preprogrammed with algorithms that adjust blower's duty and delivers the desired DO setpoints based on on-line measurements. By treating only when needed, you save on energy costs with typical savings of circa 10 to 20%.

Predictive diagnostics

Prognosys is a predictive diagnostic system that allows you to avoid instrument down time, by alerting you to upcoming maintenance needs.

Hach Service – By your side

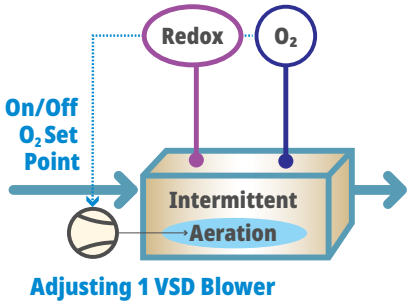
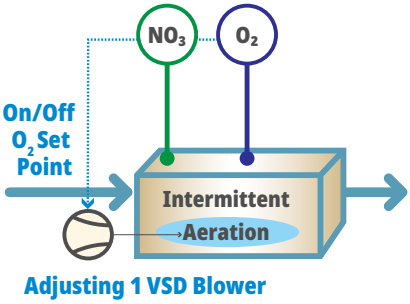
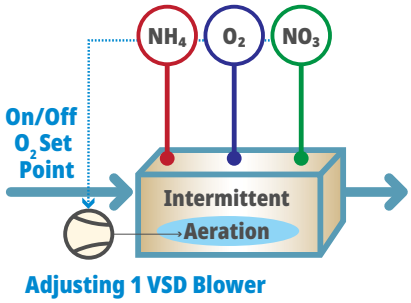
Commissioning, optimization and remote monitoring services help you get the most out of your investment. Let an expert team from Hach monitor your system to maintain optimum performance and identify potential issues before they occur. This makes for the ideal combination with the standard field service support you have come to trust.

Principle of operation

The RTC-N/DN controller adjusts treatment cycle durations and intensities for intermittently operated plants utilising on-line measurements in the aeration tank. RTC-N/DN is available in 3 versions fitting to all permit needs and budgets. Version 1 is RTC-N/DN Redox; version 2 is RTC-N/DN Nitrate and version 3 RTC-N/DN ammonium/nitrate.

As an option for all 3 versions, an additional dissolved oxygen controller (RTC-DO) is available to adjust the aeration intensity to deliver the calculated DO set point in the Aeration Tank during the aeration phase.

If input signals for any of the on-line sensors used by RTC are not available, the system automatically switches to resilient fallback strategies.

Version 1 : RTC-N/DN Redox	Version 2: RTC-N/DN Nitrate	Version 3: RTC-N/DN Ammonium / nitrate
The RTC-N/DN Redox controls intermittent aeration based on oxygen and redox measurements. Instead of relying solely on threshold values, the algorithms developed by HACH use inflection point detection at complete denitrification to optimize the process for optimal nitrate removal and maximum available nitrification time and reducing total cycle time to Prioritising Total Nitrogen Removal.	The RTC-N/DN Nitrate controls intermittent aeration based on oxygen and nitrate measurements. RTC is considering oxygen inflection on complete nitrification (avoiding excessive aeration) and absolute concentration of nitrate for de-nitrification (avoiding extended de-nitrification phases) adjusting the cycle times to Prioritise Total Nitrogen Removal.	The N/DN controller is designed to consider both the absolute concentrations of ammonium and nitrate as well as the rate of change for these parameters. The RTC-N/DN provides a DO-set point for the nitrification phase considering the actual NH4-N in the aeration tank, maximising nitrification capacity. This allows complete flexibility of the absolute ammonium and nitrate levels when complete removal may not be required.
		
Part Numbers: LXV525.99xCxxxx – N/DN LXV525.99xDxxxx – N/DN(DO) LXZ520.99.L0101 – N/DN for existing SC4500 LXZ520.99.L3101 – N/DN(DO) for existing SC4500	Part Numbers: LXV525.99xCxxxx – N/DN LXV525.99xDxxxx – N/DN (DO) LXZ520.99.L0101 – N/DN for existing SC4500 LXZ520.99.L3101 – N/DN(DO) for existing SC4500	Part Numbers: LXV525.99xCxxxx – N/DN LXV525.99xDxxxx – N/DN (DO) LXZ520.99.L0101 – N/DN for existing SC4500 LXZ520.99.L3101 – N/DN(DO) for existing SC4500

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.