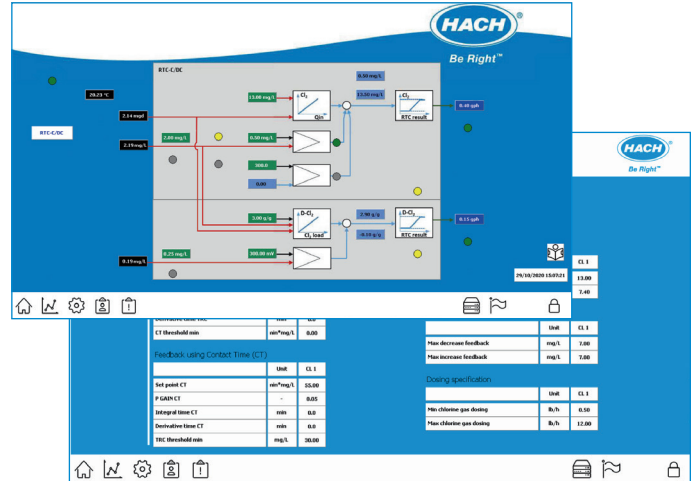


RTC-C/DC Module Real-Time Control Solution Chlorination/Dechlorination

Applications

- Municipal Wastewater
- Industrial Wastewater



Disinfection. Under Control.

The Hach[®] RTC-C/DC module simplifies the management of your chlorination and dechlorination processes and maximizes performance through real-time measurements and chemical dosing control, providing peace of mind and allowing you and your team to focus more time and energy on high-value tasks that matter most.

Real-time disinfection process visibility

With real-time data and visualizations, you can see and understand exactly what is going on in the disinfection process at any time and how the software is responding. This visibility and new data eliminates guesswork and uncertainty, facilitates training and knowledge sharing opportunities, and offers a level of real-time understanding otherwise unattainable.

Optimized chemical usage

RTC-C/DC can optimize chemical use while meeting your target effluent water quality, avoiding both over-dosing and under-dosing of chlorination and dechlorination chemicals. Real-time control improves your performance allowing for reduced chemical usage and helps you realize the full treatment capacity of your plant.

Increased operator safety

Reduce exposure risks to operators with fewer grab samples and the potential for less frequent changing of cylinders or filling of Hypo tanks.

Consistent effluent quality

Achieve your target effluent water in variable conditions and across all staff shifts, 24/7. This helps ensure continuous production, permit compliance, and protection of your public reputation. For peace of mind, the RTC-C/DC module comes equipped with built-in fallback strategies with the ability to define ranges of valid measurements and automated alerts to the customer via text or email.

We understand every plant is different

Hach has installed thousands of Claros Process Management systems, including RTC modules. Based on its modular design allowing millions of combinations, it fits almost all plant configurations and solves unique challenges. Only Hach offers a complete solution based on reliable analytical instrumentation and advanced algorithms. With Hach, you'll benefit from our dedication to innovation and over 80 years of process expertise.



Be Right[™]

Principle of Operation

The Hach Claros Process Management (CPM) system for Chlorination/Dechlorination (RTC-C/DC) measures chlorine demand in real time and adjusts chemical dosing to achieve the required disinfection to meet effluent chlorine limits.

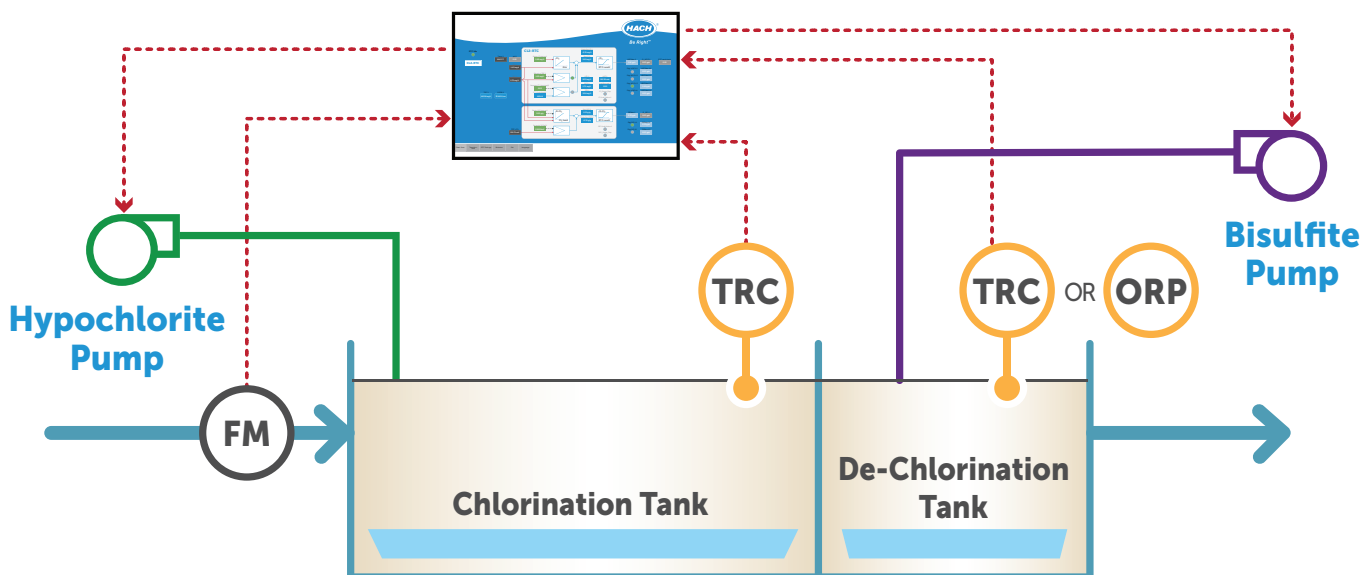
The RTC-C/DC system calculates the minimum amount of chemical disinfectant required in the contact tank to maintain a user-defined CT (concentration x contact time) value within Total Residual Chlorine (TRC) limits. The RTC-C/DC system also calculates the required amount of dechlorination chemical to achieve effluent compliance. Fallback strategies, safety limits, and condition-based monitoring are preprogrammed in the system and configured for the specific facility during commissioning.

The system uses both feed forward and feedback loops to manage chlorination and dechlorination. The feed forward chlorination calculation is based on continually maintaining an influent concentration of chlorine that correlates to the chosen CT by adjusting the dosage based on wastewater flow. The feedback calculation modifies the influent chlorine dosage based on the measurement of TRC at the end of the chlorine contact tank which will detect when the chlorine demand has changed.

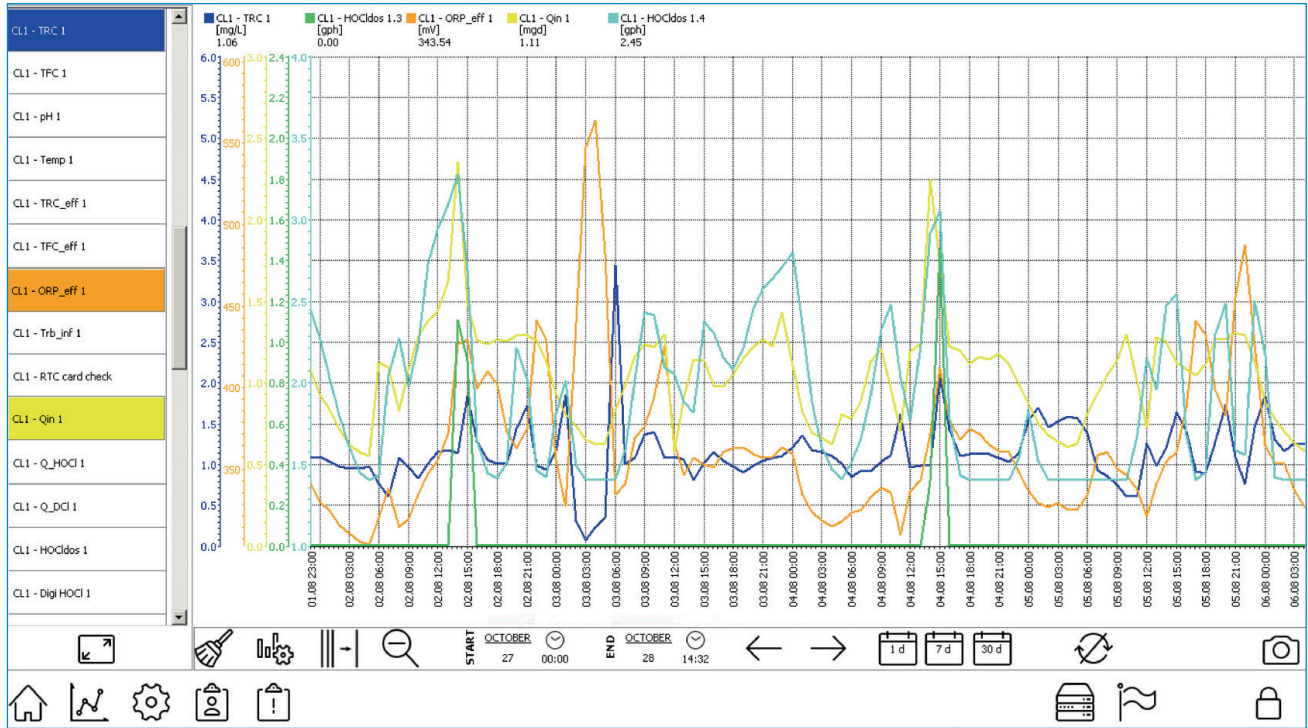
The feed forward dechlorination calculation is based on flow and the measurement of TRC at the end of the chlorine contact tank. The optional feedback calculation modifies the dechlorination chemical set point based on the measurement of TRC at the end of the dechlorination tank.

Additional Claros Process Management calculations provided within the controller:

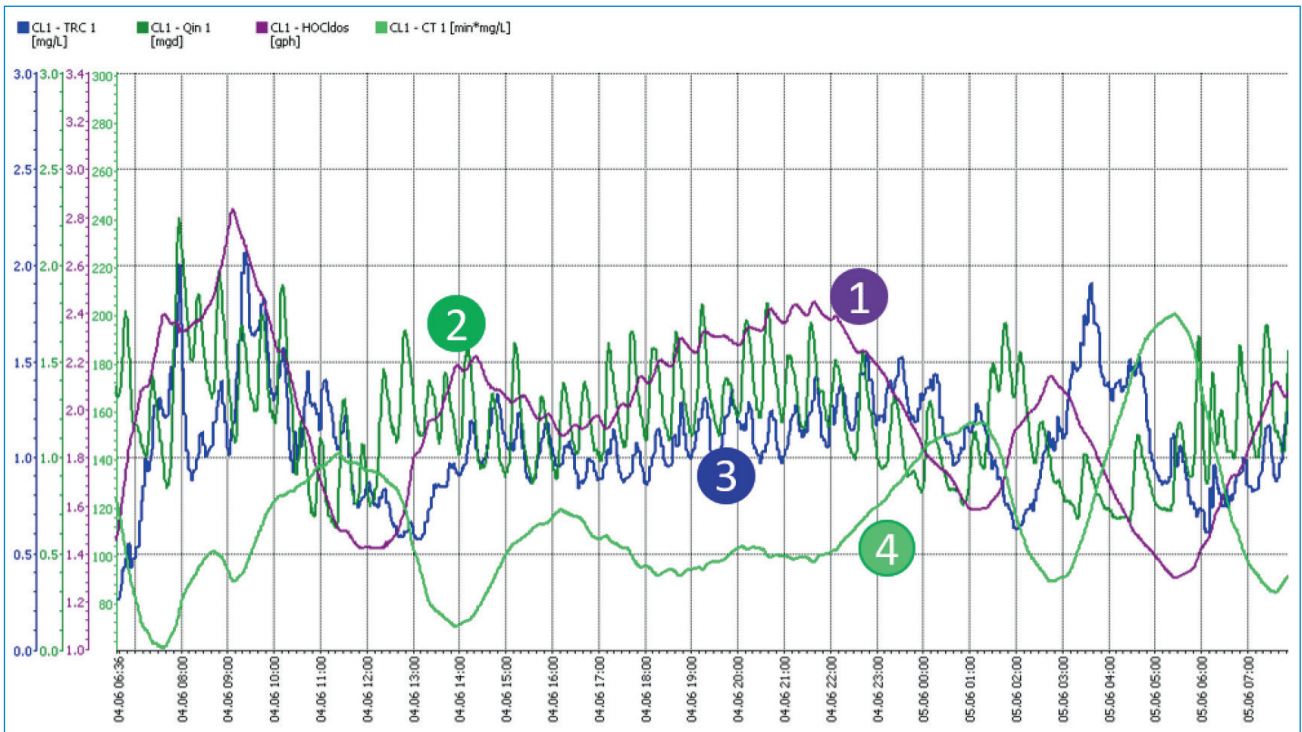
- Total Chlorine Demand
- Instantaneous Chlorine Demand
- Chlorine Decay Demand
- By-Product Formation (TTHM & HAA) Estimation
- Estimate of Log Inactivation



Hach specialists provide free guidance on appropriate instrument placement, options and configuration to meet your site's needs.



The RTC-C/DC software includes powerful trending and visualization tools for real-time visibility of disinfection process performance and results.



The C/DC controller doses (1) both volumetrically based on influent flow rate (2) and deviation from the setpoint with PID feedback from a chlorine analyzer (3) to keep the CT (4) within a specified range. As illustrated here, the RTC-C/DC dynamically adjusts chemical dosing in real-time to achieve and maintain effluent water quality targets, respond to load changes and events, and reduce waste.

