

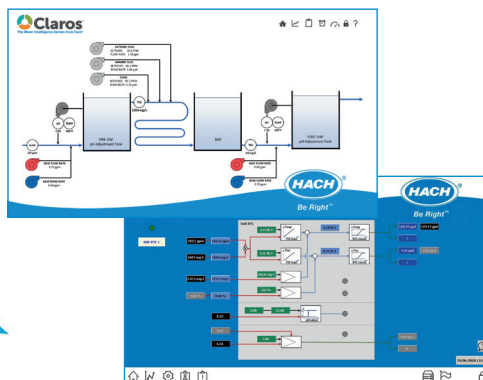
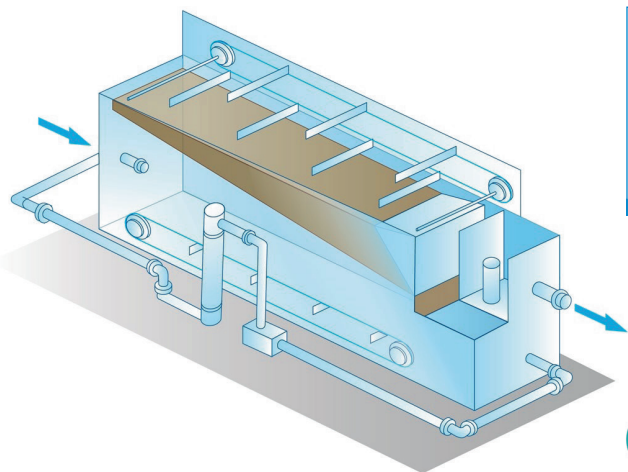
RTC-DAF Module

Real Time Control Solution

Dissolved Air Flotation (DAF)

Applications

- Food and beverage
- Oil & Gas
- Pulp & paper
- Textiles
- Industrial wastewater
- Municipal wastewater



DAF Chemistry. Under Control.

Hach®'s RTC-DAF module simplifies the management of your DAF 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 DAF process visibility

With real-time data and visualisations, you can see and understand exactly what is going on in the DAF 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.

Consistent DAF results

Achieve your target effluent water and sludge quality in variable conditions and across all staff shifts, 24/7. This means peace of mind as it helps ensure production continues, you comply with permits, and your public reputation is protected.

Reduce effluent costs

Real-time control improves your DAF performance allowing for higher solids removal efficiency and a cleaner discharge. This reduces downstream utility fees and any environmental discharge costs, and aids with avoiding costly violations.

Save money on treatment

RTC-DAF minimizes chemical use while meeting your target DAF effluent water quality, avoiding both over-dosing and under-dosing of coagulant and flocculants. This leads to chemical savings and improves sludge quality, further reducing your sludge treatment and disposal costs.

We understand every plant is different

Hach has installed thousands of Claros Process Management (RTC) systems around the globe. 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.



Principle of Operation

The RTC-DAF module maximizes the solids removal and clear water quality through real-time measurements and control. RTC-DAF adjusts coagulant and flocculant dosing through feed forward and feedback controls in order to maintain an effluent turbidity (NTU) or TSS (mg/L) at a target value. Three chemicals can be controlled: coagulant, cationic flocculant and anionic flocculant.

The feed forward model can be one of two different preloaded methods: parts per million (PPM) based upon inflow and specific gravity of the chemicals; or dosing chemicals in proportion to the load of TSS (or TOC) entering the DAF (pounds of chemical per ton of solids). The feedback controller uses PID based on effluent turbidity or TSS to adjust the feed forward model. Typical output from the DAF module are flow rate setpoints for coagulant and flocculant dosing, which can be sent directly to chemical feed pumps or a PLC.

Coagulant and flocculant flow rate setpoints can be generated independently through the PPM logic, in proportion to the other (e.g. flocculant is 30% of coagulant dose) or at a fixed value (e.g. flocculant at 17 L/h).

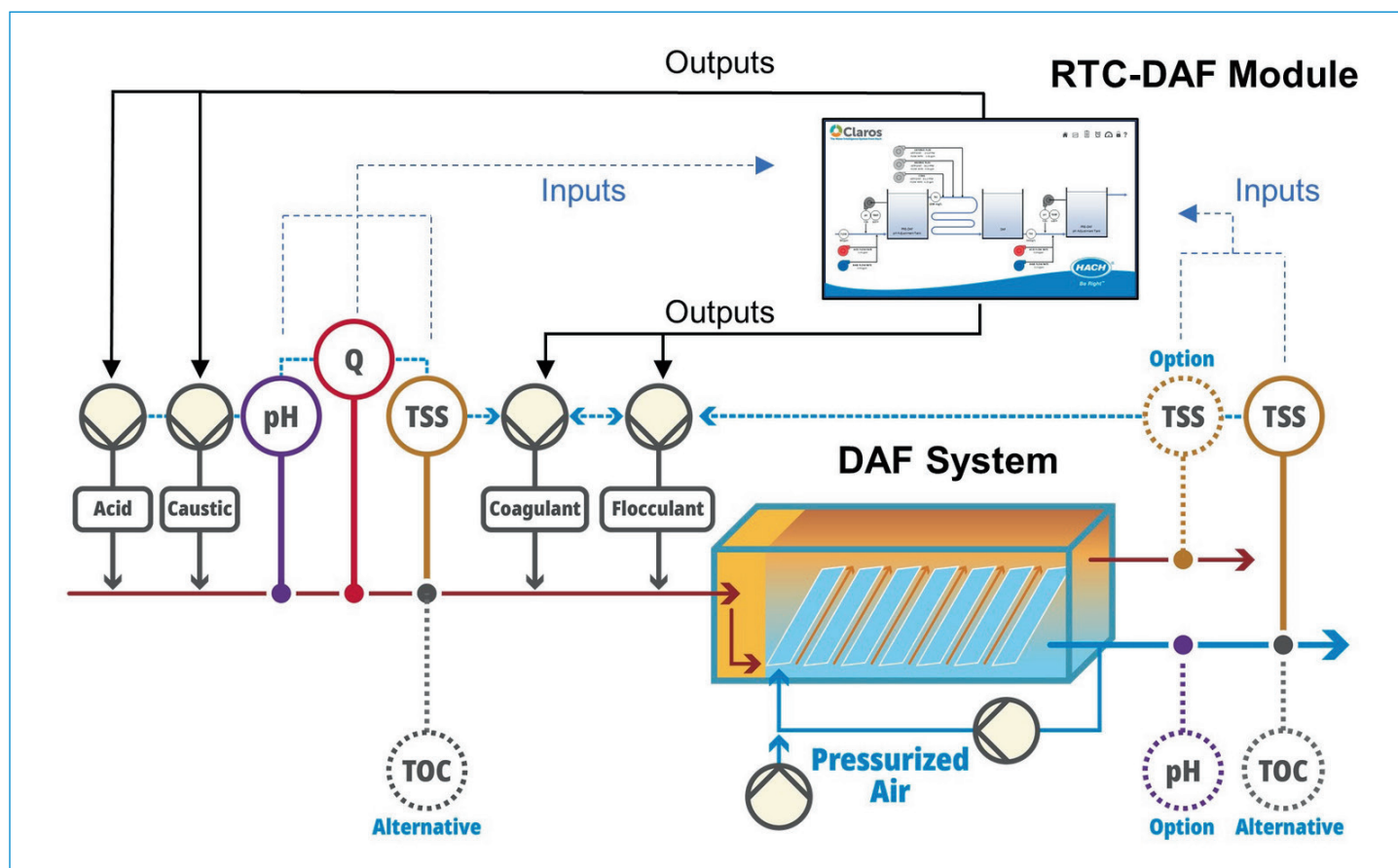
Minimum and maximum limits can be configured for chemical flow setpoints, pH impact on the chemicals, pump configuration and PPM range or influent load. All measured and calculated values can also be configured with local and remote alarms including email/SMS.

Two optional pH controllers are included which can control acid and base dosing for applications both pre-DAF and post-DAF to maintain the pH within an end user selectable range through the use of multiple PID loops.

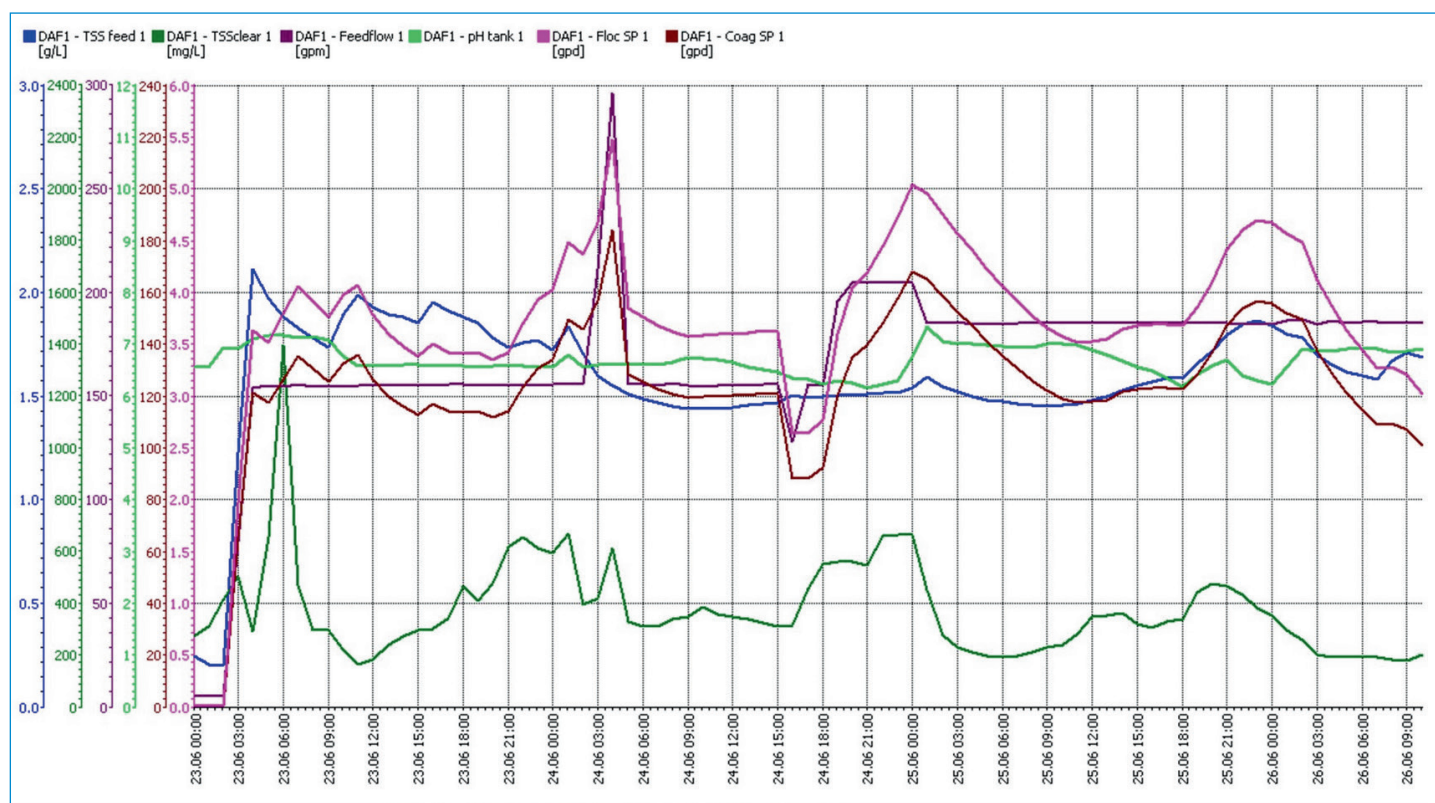
Fallback strategies exist for each measured parameter if the measurement is lost or if a fault is detected. Chemical dosing will stop if the inflow falls below the user selected value or if the pH falls below or exceeds an adjustable pH limiting value.

Two display options exist: a DAF process flow style diagram or a process control function diagram.

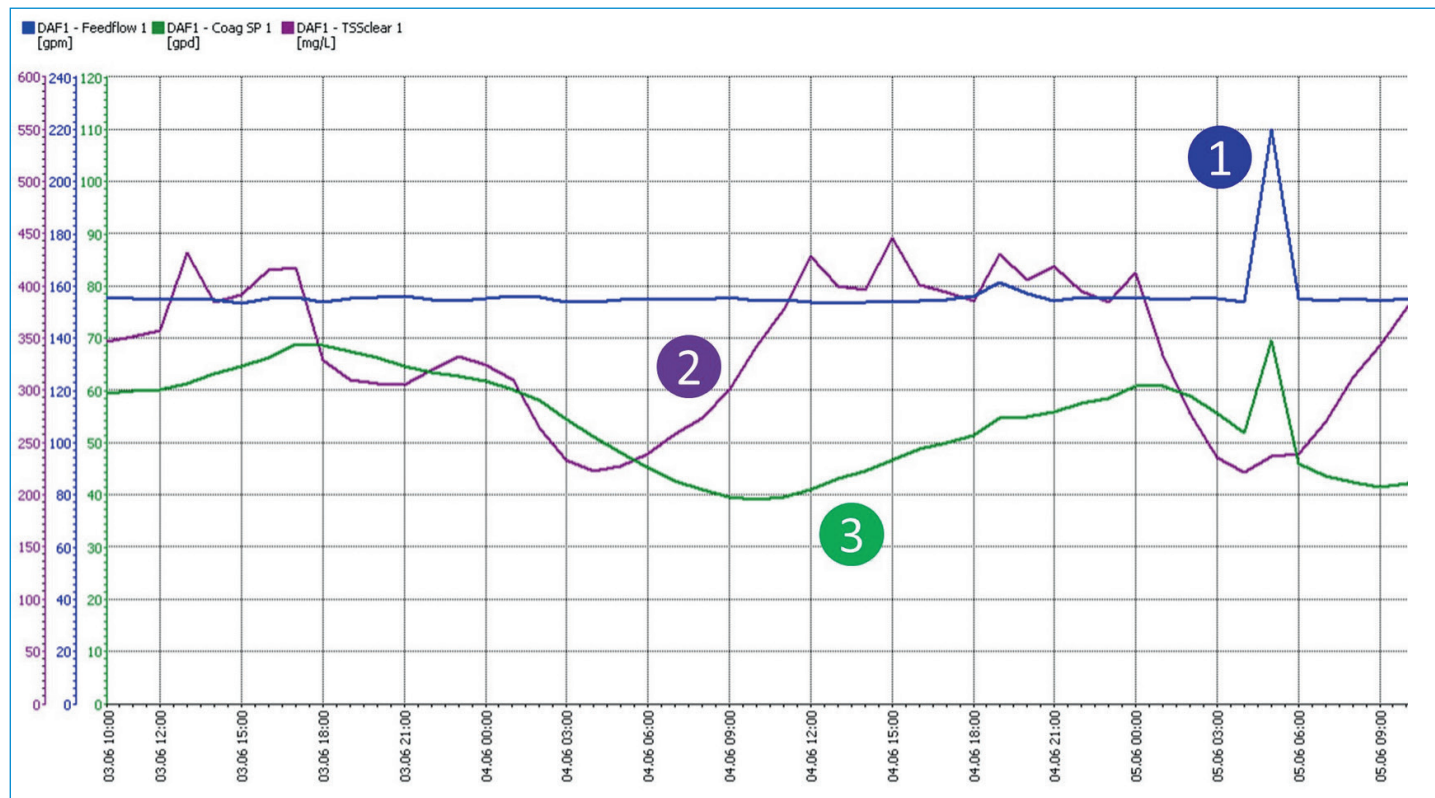
In addition to the required parameters for control, up to three (3) additional inputs can be recorded and trended.



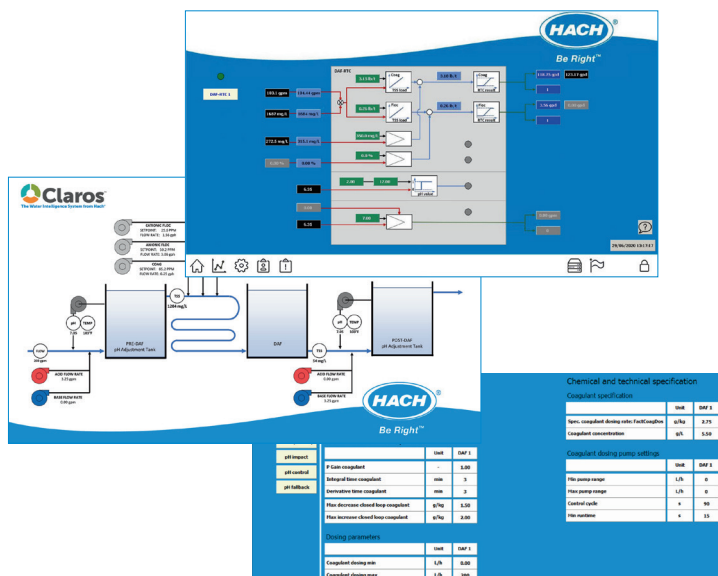
Hach specialists provide free guidance on appropriate instrument placement, options and configuration to meet your site's needs.



The RTC-DAF software includes powerful trending and visualization tools for real-time visibility of DAF process performance and results.



Actual DAF process data as the RTC-DAF stabilizes performance and optimizes chemical dosing. Parameters displayed are (1) flow, (2) effluent TSS and (3) coagulant dosing. As illustrated here, the RTC-DAF dynamically adjusts chemical dosing in real-time to achieve and maintain effluent water quality targets, respond to load changes and events, and reduce waste.



Examples of a typical RTC installation and RTC-DAF user interface screens. All settings, validity and fallback strategies are configured through the touchscreen and can be password protected.

Order Information

RTC-DAF Module

LXZ517 (B) RTC-DAF Module, software only. To be used with LXV515.

Control module for automatic, load-based coagulant dosing, flocculant dosing and pH control for DAF process effectiveness and optimal solids removal

LXV515 IPC Hardware

Please note: Using RTC modules requires applicable transmitters, communication accessories and inputs from analytical instrumentation. Please consult your local Hach sales manager to learn more.

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 RTC 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 optimize your RTC at its highest performance and efficiency levels for your application.