SOLUTION SHEET

Octave Tempo Control Loop Tuning

Provides control loop tuning capabilities to improve process safety and efficiency



Key benefits

- Enhanced process safety
- Decreased process variability
- Increased plant reliability
- Improved preventive maintenance
- Lower operating costs
- Optimal process operation

Challenge

In most plants, PID performance falls short because of poor tuning and instrumentation issues. Valve reliability is also a persistent challenge, with many assets affected by mechanical problems. As a result, more than two-thirds of PID controllers operate below optimal performance. This leads to abnormal situations and system instability, which adversely affects process safety, efficiency and profitability.

Solution

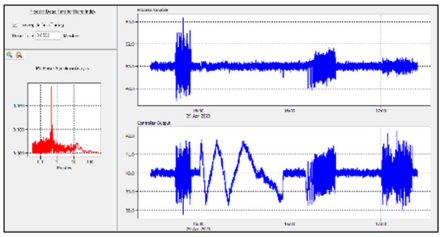
Octave Tempo Control Loop Tuning (formerly PAS TuneWizard) improves control loop performance by thoroughly assessing the following control elements:

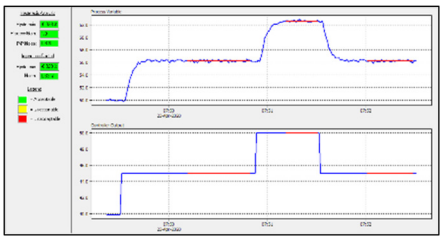
- Process variability (linear and nonlinear)
- Control elements (valves and measuring devices)
- Control objectives
- Controller type and tuning methodology
- Closed loop performance evaluation (setpoint response, disturbance rejection)
- Closed loop system robustness

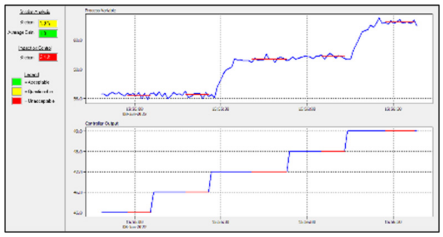
Tempo Control Loop Tuning provides the essentials for control loop optimization by calculating optimal PID controller and filter settings, eliminating the guesswork from tuning.

Tempo Control Loop Tuning helps you:

- Highlight control valve deficiencies to pinpoint the cause of poor performance
- Minimize time-consuming trial and error tuning
- Tune for long-term performance (setpoint response and disturbance rejection)
- Balance control performance and robustness
- Test new controller settings with simulations prior to making online changes
- Document work for future reference



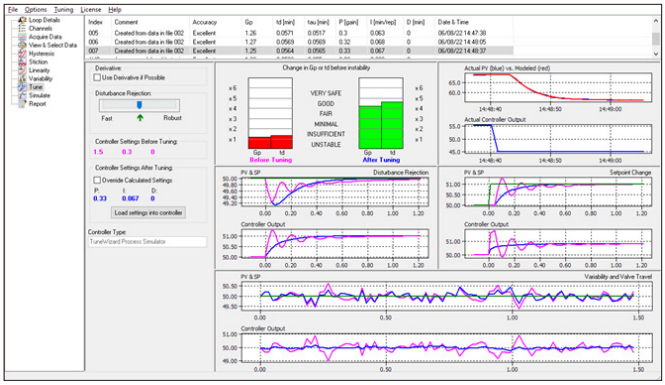




PID controller analysis and tuning

Tempo Control Loop Tuning provides the capabilities needed to optimize control loop performance in a practical, easy-to-use solution. It's unique and powerful features include:

- Control loop diagnostics
- Process model identification
- Controller tuning calculation and simulation
- Performance evaluation for setpoint response and disturbance rejection
- Closed loop system robustness assessment
- Reporting/documentation



Tempo Control Loop Tuning's user-friendly interface displays various types of analyses and simulations of loop behavior before and after tuning. Using process data, a model is created and used to generate controller tuning parameters based on the selected tuning criterion. The closed loop performance is simulated and displayed for setpoint and disturbance (load) changes and contrasted with that of the old tuning parameters. Tempo Control Loop Tuning also assesses closed loop robustness, which measures the ability of the controller to perform efficiently as the underlying process changes. Using the slider, the user can adjust the tuning parameters and evaluate the impact on control performance and robustness. Once optimal tuning parameters are established, users can apply the updated settings automatically or manually within the control system.

Tempo Control Loop Tuning works together with Octave Tempo Control Loop Performance (formerly PAS ControlWizard) to provide a comprehensive control loop management solution covering actionable performance analytics, extensive diagnostics and advanced tuning. When launching Tempo Control Loop Tuning from Tempo Control Loop Performance, the parameter information (PV, SP, OP) and OPC connection information is pre-populated. Move from problem identification to corrective action with a simple right-click.

Tempo Control Loop Tuning is part of Octave Tempo Control System Effectiveness (formerly PAS PlantState Integrity) which provides a single platform to deliver unique insights into process safety risk. The solution uses a single data capture layer to monitor the performance of alarm systems, control loops, operational limits and independent protection layers (IPL). By combining these metrics into a single pane of glass along with exception-based reporting, Tempo Control System Effectiveness provides actionable insight to ensure companies operate their facilities effectively while improving safety and environmental performance.

To learn more about Tempo Control Loop Tuning, Tempo Control Loop Performance or Tempo Control System Effectiveness, please visit octave.com.

Visit octave.com

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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