

TaiJi PID

Honeywell



Advanced Solutions

## TaiJi PID

A Comprehensive Closed-Loop Tuning Solution

POWERED BY  
MARIKON

## FEATURES & BENEFITS

- Optimize multiple PID controllers simultaneously in a closed loop
- Enable tuning through non-disruptive closed-loop testing
- Increase plant productivity while reducing downtime and maintenance costs
- Decrease variability and operating costs

# TaiJi PID

## A Comprehensive Closed Loop Tuning Solution

### OPTIMIZE MULTIPLE PID CONTROLLERS SIMULTANEOUSLY IN CLOSED LOOP

TaiJi PID is an intuitive PID Loop Tuning and Optimization application that eliminates the guesswork in control tuning and loop optimization by allowing you to tune high-performance controllers without breaking open loops or making manual adjustments. TaiJi PID is Powered by Matrikon, which represents vendor neutrality. This product works with third-party control systems and applications.

It is the only tuning product in the market that leverages universal connectivity to enable tuning through non-disruptive closed-loop testing under any condition. Coupling closed-loop testing and identification technology with a model-based tuning approach, TaiJi PID uses a single platform to test, tune, and trend multiple loops simultaneously.

TaiJi makes closed loop testing effective and safer by ensuring the size of the steps is small relative to the process operating point. TaiJi PID can also carry out testing in open-loop conditions traditionally where there are no control-loops currently.

### CHALLENGES

Efficiency and profitability are critical to a plant, and in an environment where thousands of regulatory control loops burden overwhelmed control engineers and technicians, plant resources need a method of managing and tuning loops without compromising productivity.

There are hundreds, even thousands of regulatory control loops across all plant areas, all which may be correlated, based on the selection of their tuning parameters.

Unavoidably, the performance of these control assets deteriorates over time and impacts the process performance.

The sheer number of these critical assets, coupled with diminishing personnel expertise, makes diagnosing problems and setting priorities based on economic impact extremely challenging. Assets believed to be critical receive priority while others “run-to-failure”, precipitating control problems in associated assets and degrading plant performance. As a result, maintenance of control assets is reactive rather than predictive or condition-based.

Changes in variables such as plant rates and energy costs also affect the performance of plant controls. Assets that performed well under one set of conditions may require re-tuning in order to provide optimal results under another. The ability to tune loops in a closed-loop environment, without placing potentially poorly tuned loops in manual is essential in reducing maintenance time, and setting priorities to effectively deal with problems that will have the most significant impact on plant performance and profitability.



## DECREASED VARIABILITY AND OPERATING COSTS

The easy implementation of TaiJi PID translates to overall improved operability and stability of the process, providing benefits through reduction in off-spec production, operating costs and product variability, as well as improved production rates.

### Benefits Throughout the Enterprise

- Improved control performance across all plant sites
- Lower adoption cost through a single, best practices solution, suitable for all regulatory control platforms
- Minimize impact of control asset degradation through condition-based maintenance
- Increased efficiency and profitability

### Benefits for Operations

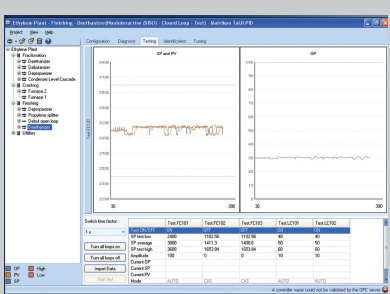
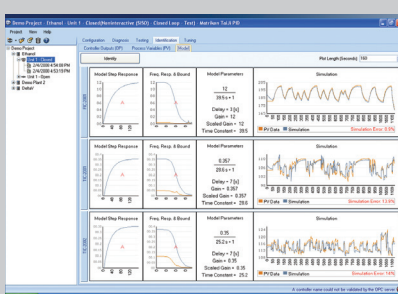
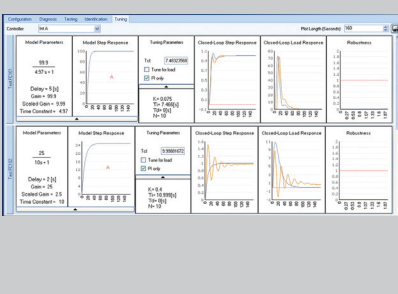
- Opportunity for increased plant throughput
- Reductions in process variability
- Improved product quality
- Improved yields
- Reductions in energy consumption
- Reduced cost and improved effectiveness through condition-based maintenance

### Benefits for Maintenance

- A single tuning tool, suitable for all regulatory control platforms
- Less intrusive, closed-loop tuning methodology, making loop tuning easier and more effective
- Automated testing capabilities, reducing manpower requirements

## TAIJI PID METHODOLOGY

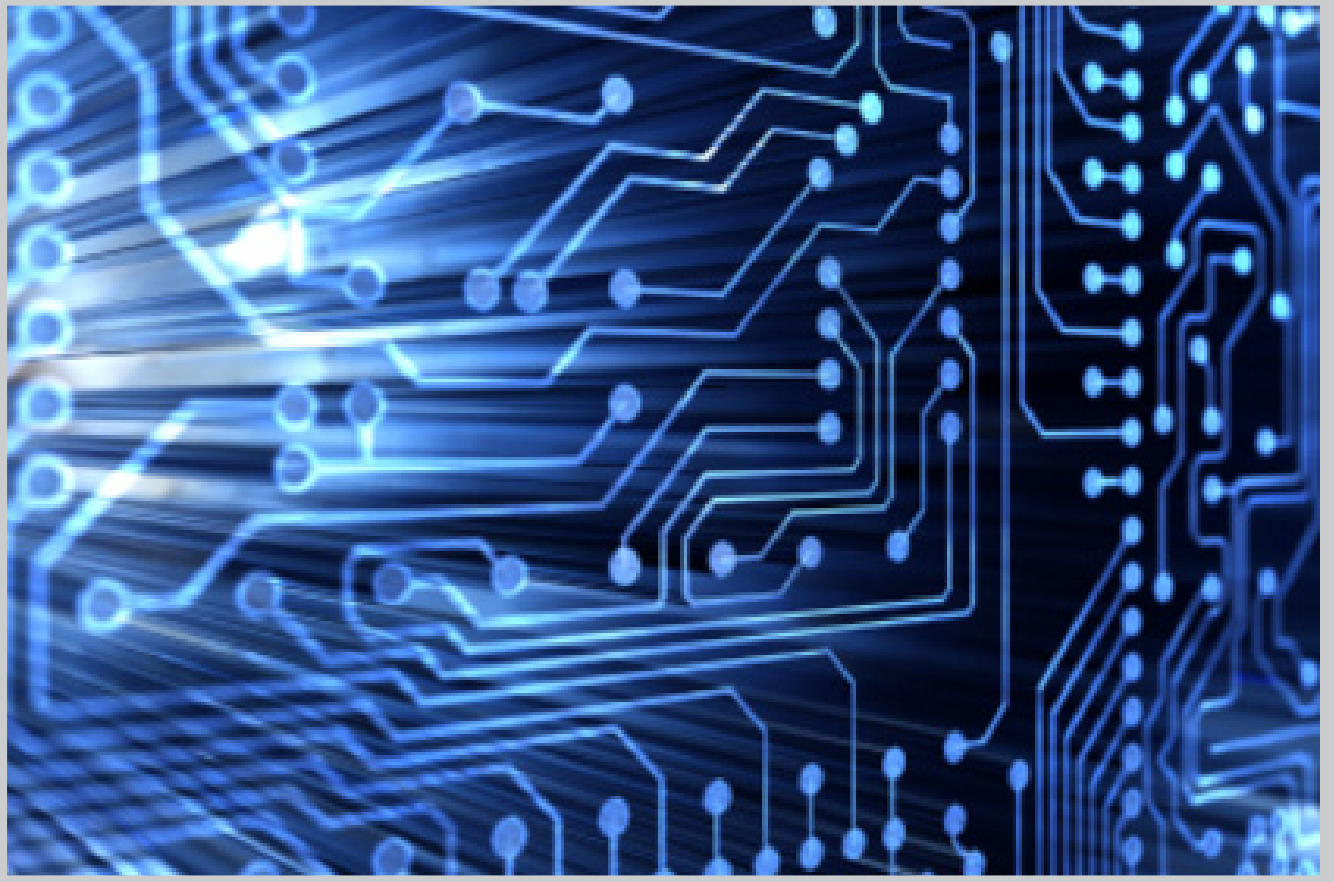
A closed-loop methodology that increases plant productivity, while reducing downtime and maintenance costs.

		
<h3>Automated Closed Loop Testing</h3> <ul style="list-style-type: none"> <li>• Test under closed-loop conditions</li> <li>• Test multiple loops simultaneously – leads to significant time savings</li> <li>• A safe approach to step testing</li> </ul>	<h3>Closed Loop Modeling</h3> <ul style="list-style-type: none"> <li>• Using closed-loop data</li> <li>• Develop accurate open-loop models from closed-loop data</li> <li>• Use operating data where there is sufficient information</li> <li>• Model graded quantitatively from A→D</li> </ul>	<h3>Tuning and Simulation</h3> <ul style="list-style-type: none"> <li>• Tune quickly using the estimated open-loop models</li> <li>• Simulate server and load rejection responses</li> <li>• Carry out robustness analysis</li> <li>• Compare against current tuning</li> </ul>

We have used other tuning tools in the past, but with TaiJi PID, we have reached a control level that has never been reached before. Our operators are now more available. This is a revolutionary tool.

Francois Tremblay  
Supervisor & Planner,  
Electrical and Instrumentation  
Xstrata Raglan Mine





**POWERED BY**  
**MATRIKON**

'Powered by Matrikon' symbolizes that this product/solution is system and application independent.

#### For More Information

For more information about Control Performance Monitor, visit our website [www.honeywell.com/ps](http://www.honeywell.com/ps) or contact your Honeywell account manager.

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