Monitor, Control & Optimise your process

perceptiveAPC
REAL TIME SYSTEM

Advanced Control for Process Industries

- BLOCK EDIT
- BLOCK VIEWER
- SIGNAL EDIT
- SIGNAL VIEWER
- EVENT CONFIG
- EVENT VIEWER
- ALARM SPECIFICATION
- ALARM VIEWER
- KPI CONFIGURATION
- KPI VIEWER
- PROCESS MONITORING
- SIGNAL WATCHER
- DATA QUALITY INSPECTION
- PROGRAMMING
- INTERFACES
- DATABASE INTEGRATION
- MESSAGE LOG
- TEMPLATES
- COMMENTS
- SIPAT
- VISUALISATION
- gPROMS

PERCEPTIVE ENGINEERING LTD

ACHIEVING EXCELLENCE, WITH ONE INTEGRATED PLATFORM

PerceptiveAPC Real Time is a fully-featured platform for executing Advanced Process Control strategies in industrial manufacturing. Its intuitive interface and workflows guide the user through communication with industrial automation systems, PAT integration and Web enabled displays. **PerceptiveAPC** provides all the latest advanced control technologies for deployment within the process industries.

PROCESS DATA INTEGRITY MONITORING

Combining a comprehensive suite of modelling tools and a simplified user interface, **PerceptiveAPC Real Time** enables users to quickly develop soft sensors. Both linear and non-linear models are available, with model path masking, sensitivity analysis and cross validation metrics. Using our **gPROMS** integration module now creates a route for high fidelity mechanistic models to run in parallel with empirical models, offering hybrid soft sensors using the advantages of both techniques.

PROCESS MONITORING

Deploy real-time monitoring engines for improving the detection, identification and diagnosis of faults within complex processes. Each monitor can be fully evaluated by streaming historical process data to ensure high robustness and provide effective and meaningful alarms.

PROCESS CONTROL

Provides a user-friendly environment to deploy a variety of frequently-used industrial control algorithms. With engines ranging from PID to Batch and Continuous Multivariable Model Predictive Control, the user has access to the latest technology in the field.

PROCESS OPTIMISATION

After improved control comes optimisation. Using configurable templates for model, constraint and cost function configuration, the user can quickly evaluate the optimiser's mode of operation for both continuous and batch processes.

YOUR PROCESS, IMPROVED

perceptiveAPC
REAL TIME SYSTEM

PLATFORM FEATURES

REAL TIME COMMUNICATIONS
Interfaces to all commercial PLCs via OPC DA client and server, Web Client & Server architecture, IIOT MQTT; Real time data integrity monitor automatically identifies outliers, faults and out of range signals. Web-enabled remote displays for desktop and mobile devices. Connector for storage of Data and KPIs in Microsoft SQL or Oracle databases.

PROCESS MODELS
Mechanistic (via gPROMS) and empirical steady state and dynamic models for soft sensors, monitoring, control and optimisation executed open (Advisory Mode) or closed loop. Continuous and batch models, parametric and non parametric formats. All model parameters, predictions, and performance metrics are available via an intuitive user interface.

PROCESS MONITORING using SPC, MVSPC
Real Time Shewhart, EWMA and CUSUM charts with Western Electric Rules, Automated Outlier detection and alarming. Full suite of templates for multivariate process monitors using Principal Component Analysis, Partial Least Squares and Extended Partial Least Squares methods. Univariate SPC Alarm Thresholds, Multivariable Alarm Thresholds, Operating Zone Classification, Fault Detection, MVSPC Plots – SPE & T2, Threshold Filtering, Fault Identification, Multi-Model Operating Modes, Fault Fingerprints, Fault Diagnosis, Contribution Plots.

CONTROL ENGINEERING
PID Controller selectable structures. State of Art Linear and non linear Model Predictive Control, for both continuous and batch processes. Adaptive control system for all model formats. Stiction compensator. Tools include Robustness Analysis, automatic management of lost signals, uncertainty and model switching for multi product systems. Integrated performance metrics and de-tuning functionality.

OPTIMISATION
Steady State and Incremental Linear, Quadratic, Sequential Quadratic Programming (LP / QP / SQP), Real-time Optimisation Engines with prioritised relaxation for industrial applications, Batch Endpoint Optimisation using unique PLS design.

ALARM & EVENT MANAGEMENT
Configurable Events and Alarms are stored in an SQL database, can initiate emails, trigger reports and provide a real time record of an incident.

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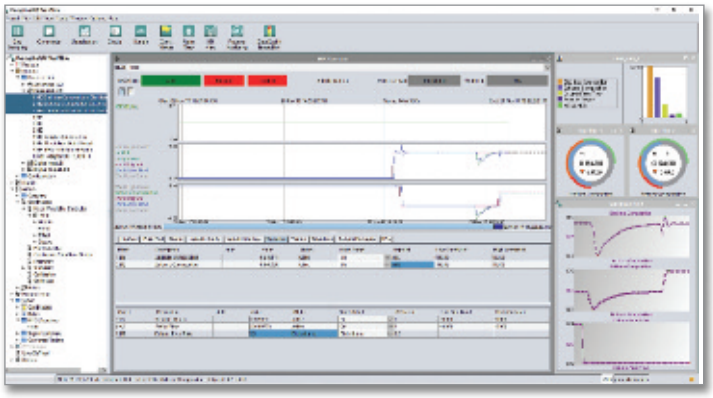
INDUSTRIALLY TESTED TOOLS FOR ENGINEERS
More than ever, process engineers are asked to improve and increase production and quality from existing assets. To do this, they need the skills and tools to evaluate ideas and opportunities to demonstrate tangible benefits in short timeframes.

PerceptiveAPC Real Time Platform incorporates a wide range of leading-edge APC techniques, providing a powerful, configurable platform independent of the existing automation platform. The platform is available in a modular form, offering a staged approach to deploying APC solutions.

- Enable experimental design on Pilot plants with automatic DoE's
- Deploy soft sensors to back-up analytical devices or create new measurements from surrogates. Use pre-configured facilities to incorporate Quality measurements for the Lab.
- Execute real time Monitors, Model Predictive Controllers and Optimisers from configurable GUI's to provide a complete customised solution for your process.



- Create solutions to run in the laboratory, pilot plant and commercial manufacturing scale.
- Operates with an open architecture, sharing all the internal information with other industrial software products via standard interfaces.
- An integrated Python interpreter and editor is provided. Application specific logic can be developed with access to the RealTime platform via a flexible Python module. Python script is executed in a dedicated and secured thread to ensure application integrity.
- Comprehensive technology User Guide and Support Portal for remote assistance.

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