

A THE B C /s OF APC

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How to best utilize advanced process control (APC) technologies to your advantage

To be profitable in today's market environment, process industries must constantly find ways to minimize costs and maximize throughput. It seems simple, but the reality is that process industries face enormous challenges in complying with safety and environmental regulations and quality specifications. They also must contend with changing global economies and continuously produce the best slate of products.

Many process industries have turned to advanced process control (APC) technologies to help them overcome these challenges and achieve higher profits. As automation in processing plants has increased, more information is available to the engineer and operator to optimize operations on a daily basis. APC provides an economical and efficient means to leverage the plant automation infrastructure to provide direct, continuous and measurable benefits to operating facilities.

Layered optimization

Layered optimization is a prudent choice for customers looking to maximize the value of their existing investments without switching to expensive new software. With layered optimization, they can build on their existing infrastructure to drive process improvements. This layered approach lets customers use the right level of optimization for their particular business needs. As its name suggests, layered optimization is an evolutionary process that begins by stabilizing a unit. When the benefits justify another layer of optimization, process customers can choose to optimize multiple units and eventually the entire plant

Honeywell provides an optimization solution that offers significant, sustainable benefits quickly and cost effectively. To do this, Honeywell first helps customers determine the right level of technology to solve their problems. We base our recommendation on a number of

criteria, including the customer's expected return on investment, maintenance costs, potential tangible and intangible benefits and the complexity of the solution. Honeywell also considers process changes, process flexibility and the customer's level and availability of technical expertise.

APC implementation and maintenance methods

Honeywell optimization technology is simple to implement and maintain because of the layered approach and use of smaller scope models as compared to other optimization technologies. Honeywell optimization also offers easy-to-sustain benefits because solutions are inherently straightforward and less complex. Implementation challenges usually arise in large-scale non-linear optimization projects, which may require integration with a third-party proprietary model. This usually results in higher maintenance and implementation costs.

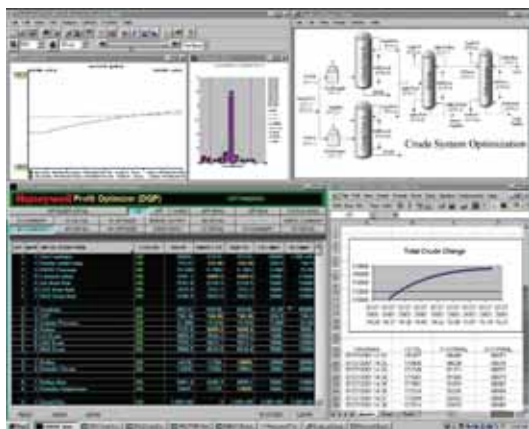
Honeywell's layered optimization solution, however, addresses linear and non-linear challenges alike. The cornerstone of the solution is Profit[®] Controller, Honeywell's multivariable control and optimization application for complex and highly interactive industrial processes. Based on Honeywell's patented Robust Multivariable Predictive Control Technology (RMPCT), this comprehensive package provides all of the necessary tools to design, implement, and maintain multiple-input/multiple-output (MIMO) applications to drive customers' processes to maximum economic benefit.

Profit Controller is an integrated component of Honeywell's Profit Suite for Advanced Control and Optimization. This collection of advanced applications delivers solutions that address every aspect of modern process plant operations—from regulatory control to plant-wide optimization. As the foundation of Honeywell's layered optimization approach, Profit

Controller provides the base for increasing economic benefits of customers' processes in a user-friendly environment. Project payback periods of less than a year are typical with sustained benefits lasting indefinitely.

Profit Controller has an extensive track record of success in nearly every processing industry and many unique processes. It offers unrivaled integration with Honeywell Distributed Control Systems (DCSs), as well as applications on virtually any system.

Building on Profit Controller, Honeywell's layered solution also includes Profit Optimizer, which dynamically coordinates Profit Controller applications for multi-unit to plant-wide optimization and control. Profit Bridge adds further benefits by adding non-linear model information from Honeywell's UniSim™ process models or other third-party models. Also, Honeywell's ProfitMax® Real Time Optimization System can be used in specialized applications to solve highly non-linear problems or more complex optimization problems.



The benefits of APC deployment

Profit Suite applications offer numerous benefits, including:

- Increased throughput
- Improved conversion/yields
- Decreased operating costs
- Higher realization of potential benefits due to the larger scope of optimization
- Optimized performance under changing operating conditions (economies, feed stocks, etc.)
- Integration with off-line business planning tools

In search of these results, a petroleum refining company producing 127,000 barrels per day came to Honeywell to optimize its crude unit control. The project scope included a crude unit with two preheat trains, a prefractionator, a crude heater and a crude column, as well as a gas plant with a debutanizer and a depropanizer. Using Honeywell Profit Controller, the refinery now saves \$600,000 per year.

At another refinery, the scope of the project included a hydrogen reformer, a hydrogen distribution grid, hydrotreating reactors and hydrocracking reactors and an associated fractionation section.

Honeywell's solution consisted of six Profit Controller applications and one Profit Optimizer

application to coordinate hydrogen production and hydrogen consumption and to maximize the hydrocracker feed. Honeywell technology has helped the refinery save 10 cents per barrel and the refinery has saved 30 cents per barrel in total benefits.

These and other process industry customers are discovering the benefits of APC and optimization applications, increasing their margins and overcoming

the obstacles that prevent them from successfully competing in today's market.

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SOLUTIONS FOR THE PROCESS INDUSTRIES

FOCUS Instrumentation & Controls, p6

Pistol-grip infrared thermometers for fast, safe measurement

Four new models have been added to the company's line of infrared thermometers. The 62 Mini is a general-purpose, non-contact thermometer while the 570 Series — comprised of three models — is designed specifically for predictive maintenance professionals. All are ideal for measuring rotating, electrically live, dangerously hot or hard-to-reach objects. The 62 Mini has a temperature range of -30 to 500 degrees C, a distance-to-spot ratio of 10:1, and it uses a popular single-dot laser lighting system that indicates the center of the measurement spot. Powerful optics, an advanced sighting system, fast response time and adjustable emissivity make the 570 Series the ideal non-contact thermometers for the precise condition monitoring and analysis demands of predictive maintenance.

Fluke Corporation
888-308-5277, www.fluke.com
Circle 710

New pre-assembled blower

New factory-engineered blower package is designed to operate 8,000 hours or more between scheduled maintenance. Compact, pre-assembled, skid-mounted blower unit comes with all piping, valves and instrumentation in place. EasyAir™8000. For more Plant Maintenance & Safety products, go to page 18.

Dresser ROOTS
877-363-ROOTS,
www.rootsblower.com
Circle 711

SEAL OF APPROVAL

As today's oil and gas industry continues to respond to the challenging dynamics of a world economy, there is little argument that compressor reliability and uninterrupted operation are paramount and crucial to plant operation. Compressor sizes continue to increase, as do their cost. One way to improve compressor reliability is the integration of dry gas seal technology. Learn the secret to achieving more than 40,000 hours on gas seals in this *Processing* exclusive article, which begins on page 26.

Two-wire temperature transmitter

Two-wire transmitters provide a 4-20mA signal for temperature. The units include a 3-1/2 digit display and RTD sensor. The NEMA 4X (IP66) housing protects the electronics. Transmitters are available with spring-loaded probes for use with thermowells. PRTXD Series. For more Instrumentation products, go to page 8.

OMEGA Engineering, Inc.
203-359-1660, www.omega.com
Circle 712

Heavy-duty feeder meters large volumes

Unit is ideal for feeding large volumes of dry bulk solids materials. Built for heavy-duty wear and tear, feed rates in excess of 1,100 cubic feet per hour and headloads up to 5,000 pounds are achievable. Unit features a cast aluminum and stainless steel frame, conical flexible hopper with external paddle agitation, AC drive packages and pre-wired controls. MECHATRON® HC Feeder. For more Powder & Bulk Solids products, go to page 32.

AccuRate
800-606-9250,
[www. accuratefeeder.com](http://www accuratefeeder.com)
Circle 713

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