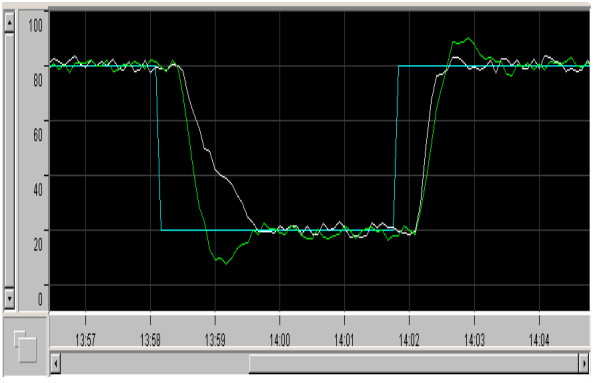
ПРОГРАММЫ

Технические характеристики

на Experion Profit Loop



Process Solutions

Honeywell

Product Information Note

PlantCruise by Experion Profit Loop

Profit® Loop is a revolutionary breakthrough in system embedded control that eliminates PID related control tuning, software and service. Process stability is increased by up to 30 percent while maintenance intervals can be extended by up to 4x.

Profit Loop is a single input / single output, model based control algorithm executed in the C300 controller. It complements traditional PID control and has the following benefits:

- Increase production rates by up to four percent
- Improve product quality
- Reduce valve maintenance
- Reduce valve travel by up to 70 percent
- Lower energy and production costs
- Eliminate valve hardware requirements, enabling smart maintenance
- Reduce maintenance costs and foster operational expertise of loops through easier tuning and system integration
- Increase plant efficiency by up to five percent

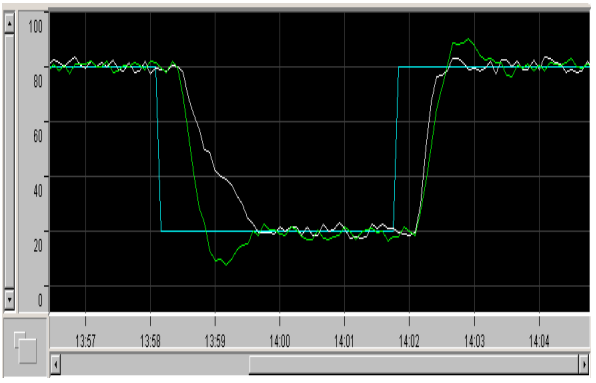
Key Advantages of using Profit Loop include:

- All traditional PID loops can be replaced with minimal impact on controller load
- Integrated tools make the technology easy to use
- Field-proven technology based on a patented algorithm provides optimal control
- Direct PID to Profit Loop conversion is transparent to the user
- Profit Loop Assistant quickly creates a process model with minimal input

Increase Safety, Profitability, and Reliability

Profit Loop is Honeywell's patented algorithm that provides single input/single output (SISO) model predictive control. Profit Loop is a revolutionary breakthrough in control automation that provides unsurpassed benefits at the regulatory control level. It is specifically designed with the operating simplicity and computational efficiency of a standard PID controller.

The controller uses an empirical model to predict the effect of control moves on the controlled variable. When integrated with PlantCruise, Profit Loop provides a complete solution that delivers greater profitability, reliability and safety with the lowest cost of ownership.



Profit Loop Delivers Superior Performance

Easy to Implement, Effortless to Maintain

Profit Loop incorporates the best elements of traditional PID algorithms and the model based control and optimization technologies of Profit Controller at the embedded control level. The Profit Loop algorithm extends the capabilities of traditional PID performance to the word of model based control, enabling easy replacement and on line migration.

Integrated Tools are Cost Effective and Intuitive

Profit Loop's innovative configuration tools remove the complexity out of model-based control. Once installed, single-handle tuning allows easy tuning of Profit Loop controllers by instrument technicians.

Profit Loop's integrated tools make it easy for non-control theory experts to implement predictive model based control. The PID migration tools enable bulk conversion from PID loops to Profit Loop by using existing PID tuning parameters to create empirical models.

Profit Loop is the Evolution of PID

The basic PID algorithm has not changed for over 70 years. PID is simple, fast, versatile, and flexible. Alternative strategies are typically very complex and have been too CPU-intensive for widespread use.

However, there are some limitations with PID control. PID Controllers have difficulties handling process delays, non-linearities, and noisy process signals. They can result in sub-optimal control with increased tuning effort and a higher process variability. In addition, transfers process signal noise directly to its controller output. Overall, these can result in accelerated valve wear, decreased production and product quality with increased operating and maintenance costs.

Profit Loop has the following features that exceed the capabilities of traditional PID algorithms:

- Range Control Algorithm (RCA) with Minimum OP
- Single-knob tuning
- Improved anti-windup handling
- Decreased sensitivity to process noise
- Non-linear level control
- Inverse response control
- Asynchronous process variable inputs
- Predictive alarming

Profit Loop Model Control

With Profit Loop, it is no longer necessary to adjust the gain, reset and derivative constants. In fact, an operator can easily retune the controller on-line, eliminating lost time and expense of an instrument technician or control engineer. If the controller becomes unstable or oscillates, "one-knob" tuning allows the operator to quickly adjust control action.

Improve Control Performance

Profit Loop achieves optimal control by using an empirical model of the process dynamics to predict the effect of control moves on the controlled variable. By anticipating future changes, Profit Loop knows exactly how much to move the process to meet desired control objectives. As a result, Profit Loop controllers don't overcorrect the process like typical PID controllers.

An accurate response leads to improved control performance, increased robustness, and less oscillatory control. Profit Loop is ideally suited for applications with noisy process signals, long time delays, or inverse response dynamics.

Range Control Algorithm Meets Dual Needs

Profit Loop's range control capability, derived from Honeywell's patented Range Control Algorithm (RCA), minimizes the effects of model uncertainty. It determines the smallest process moves required to simultaneously meet both control and optimization objectives. Its innovative handling of control through a "funnel" rather than a specified trajectory provides the controller with an additional degree of freedom used to enhance dynamic process optimization.

Application Versatility Solves Problems

Profit Loop is a generalized, model-predictive loop control and optimization software package that can be applied to a wide variety of problems across many industries. For the expert, a full set of off-line model identification tools is provided. For the novice, process models can be approximated and simply entered on-line.

Profit Loop is a model-based controller, gap controller and optimizer. It can be used to control discrete analyzers, tank levels (surge), and long delay processes. Profit Loop is so versatile, you may never build another PID controller again.

Range Control Algorithm (R

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По вопросам продаж и поддержки обращайтесь:

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