

Autotuning for processing equipment

ProLeiT

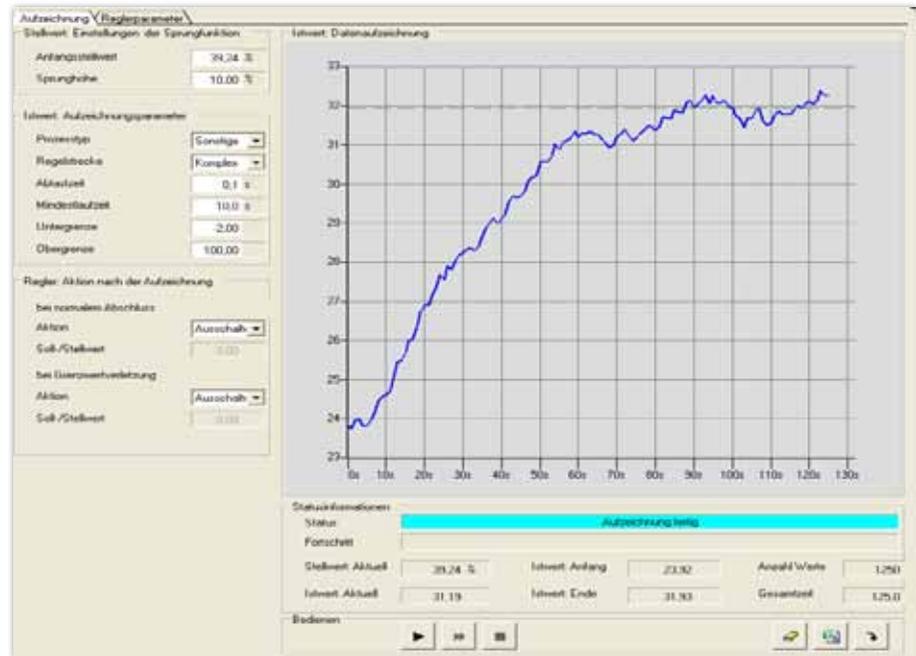
The Autotuning functionality is an add-on to the ProLeiT Plant iT/brewmaxx automation system for continuous P, I, PI, PD and PID, cascade, mixing and relation control units. The concept will receive the Dairy Technology Award 2012.

Extending conventional concepts, ProLeiT Autotuning proves to operate reliably also under difficult process conditions due to:

- Special algorithms for signal processing providing correct identification of the process dynamics and parameters;
- Identification in regard on significant deadbands;
- Stable transient processes in the control loop control that can be achieved also under disturbances resulting from changes in system parameters of the loop being identified and in the other control loops;
- shock-free switch from operating point to autotuning modus and back;
- Selection of different process dynamics profiles (high with short reaction time or stable with low over-oscillation).

Integration in Plant iT

Autotuning is an approach to automatically calculate the parameters of a PID loop control. The characteristics of the



Data recording of the Autotuning functionality (Source: ProLeiT)

controlled system will be identified and used for calculation of parameters. These parameters can then be transferred into the PID loop control. Autotuning is integrated into the database, visualization (HMI) and data acquisition modules of the automation system.

Added value

BASF Personal Care and Nutrition GmbH in Illertissen, Germany has conducted tests for Autotuning in different automation platforms. Handling the complex in-

teraction of PID loop controls by Autotuning in an evaporator, has made the added value for customers evident.

Nicolai Ziegler, head of maintenance of bei BASF Illertissen: "ProLeiT's Autotuning of the software controls is a sensation! You need no knowledge of control parameterization. And there is no need to pre-set parameters (K_r , T_n , T_v etc.) as the PID control is completely self-operating. Set up with Autotuning, the process control is in an optimum state, which even is not able to be achieved by experienced personnel"