Industry
Manufacturing

Location
Germany

Market
Pet premium food

FactoryStudio allows for centralized information

Challenge

Landguth Heimtiernahrung, a wet pet food producer, was in need of a better way of monitoring their autoclaves. Their old system had approximately 70 autoclave control systems separated from one another: that meant configuration of those systems needed to be done individually, and they had no centralized information of their processes.

Solution

Landguth had already been using a Rohrbach Elektrotechnik autoclave control system developed with FactoryStudio for more than 3 years, running as a test autoclave.

The new, innovative and robust control concept, the convenience and performance of the process visualization program and the possibility to manage all autoclaves via one central control system showed the kind of improvement needed to be convinced.

> *The implementation of FactoryStudio by Rohrbach Elektrotechnik has enabled us to easily operate and control the autoclaves from a central location. The operability of the autoclaves has greatly improved. In addition, the flexibility of the system is optimal for our requirements.*
>
> *- Landguth Heimtiernahrung GmbH*

Results

1 **Reduced risk and error:** Automatic checks reduce the number of possible operating errors and the time required to manage the autoclaves compared to the old control system.

2 **Less downtime:** During ongoing production, changes can be made to cooking programs, recipes, or to user administration.

3 **Availability:** All data is immediately available and significantly contributes to the monitoring and optimization of production processes.

It's impossible to get real information from decentralized data

Landguth Heimtiernahrung is a German producer of premium quality pet food for dogs and cats. They transform initial concepts into quality recipes, which are branded by other companies. Their factory is located in Ihlow, Germany, where they run approximately 70 autoclaves used for sterilizing cans, pouches, shells, and other containers according to each pet food's required temperature and pressure-controlled cooking program.

Their previous control system was from an autoclave manufacturer and was based on a Software-PLC that had an integrated visualization system and had become obsolete. It was a stand-alone application, meaning each autoclave had to be configured separately. This resulted in wasted time and provided no centralized information. In addition, the previous solution could neither meet the requirements regarding central control functions, nor allow data to be sent or received where needed. However, Landguth needed the modernization process to be fast and to avoid downtime. The autoclaves needed to be retrofitted one after the other and to be immediately put back into operation during ongoing operation.

FactoryStudio powered by FrameworX came through

Rohrbach Elektrotechnik rose to the challenge. They utilized FactoryStudio as the basis for a new architecture and delivered their first application in only four months. The software was used for more than three years, running as a test autoclave. The customer was convinced to expand it to the entire operation because of the innovative and robust control concept, the convenience and performance of the process visualization program, and the possibility to manage all autoclaves via one central control system.

Each autoclave control system consists of a Siemens S7 PLC and an industrial PC with a process visualization system developed in FactoryStudio. The central control system for managing all autoclaves was also developed using the FactoryStudio platform with features such as real-time Visualization, Alarming, Production Data, Status Data, Recipe Data, and Trending.

This project is also defined by its connectivity to their other systems: the autoclaves are controlled by a Siemens S7-1500 PLC that includes Siemens I/O modules, an RFID reader, and a dot-matrix scanner for basket and batch identification; all of which use the FactoryStudio integrated driver for Siemens PLC to send data quickly and efficiently.

To reduce downtime, implementation was quickly done on each autoclave. Changes in the central control system's configuration, such as changes in the cooking programs or in user administration, are automatically transmitted to the autoclaves with just one click. The complete production data, machine status, utilization, alarms, event logs, etc. of all autoclaves are automatically stored in a central SQL database for evaluation and archiving purposes.Configuration is centralized on one system and automatically replicated to the rest, thus greatly improving the speed at which changes and enhancements can be rolled out. Centralized data storage results in easy system comparisons to help establish best practices.
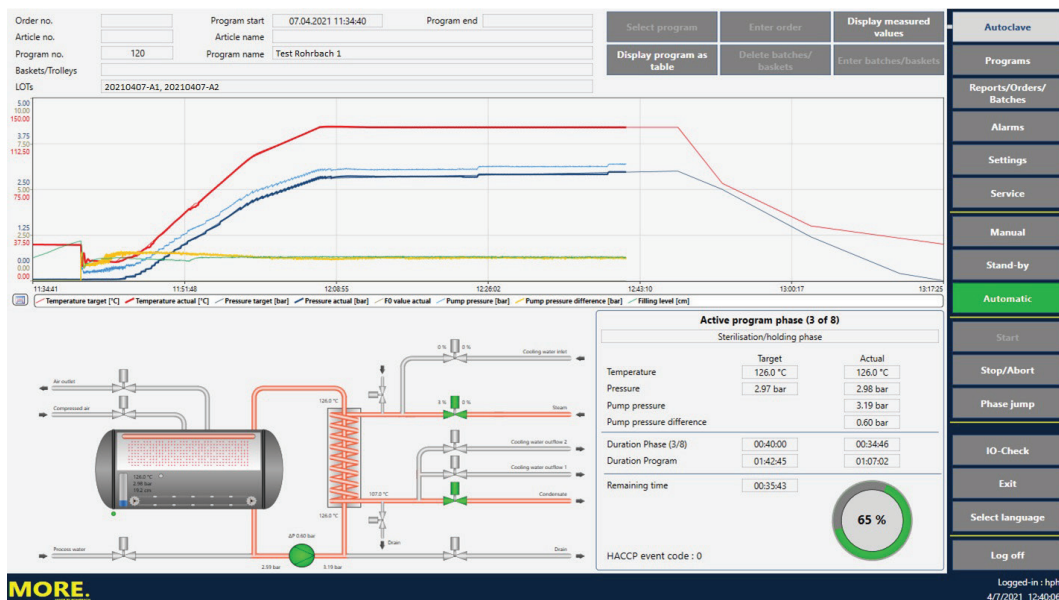
Finally, the client highlighted how quickly expanding the system with new functionality could be done. According to Hans-Peter Hermann, Senior Software Engineer for Rohrbach, "Leveraging the Code Behind feature in FactoryStudio displays enabled us to create powerful displays with custom-tailored functional capabilities on a screen-by-screen basis".

Data could be turned into real information

The end-user reported that new batches complete much more quickly and the autoclaves are now much easier and faster to operate compared to the old control system..

Changes made during operation, such as adjustments to the cooking programs or to user administration are now done automatically, reducing possible operational errors. Previously, changes were done manually by going to each autoclave with a USB stick. now all data is immediately available, which contributes significantly to the monitoring and optimization of production processes.

The design of the system includes interfaces for batch tracking of transport baskets with upstream and downstream equipment (filling lines, labelers, palletizers, etc.).

The 70 autoclaves are located in several halls, and the system will be extended by path optimization from the filling line to the next free autoclave.

Other improvements the user highlighted:

• Pop-up dialog boxes provide more intuitive process visualization on each autoclave.

• Over 140 operators working 24/7 log in via a RFID chips for guaranteed efficiency, reliability, and security.

• Landguth now has detailed, real time value logging of all sensors. Inside the reporting services, a graphic provides setpoint values and actual values to check the performance and control of the entire autoclave. Analyzing the up-peak and down-peak of curves facilitates process adjustments for optimum production and more responsive leak monitoring.

• Logging of all alarms, parameter changes, and an audit trail.

• Automatic PDF generation of the production logs are shared with stakeholders that need the information in a contextualized manner.

• Detailed log and evaluation of machine utilization, to identify downtimes and production reserves, results in reduced cooking time, less downtime, and quicker unloading of the product.

About Rohrbach Elektrotechnik

ROHRBACH Elektrotechnik GmbH, based in Butzbach, Hesse, was founded in 1987 by Holger Rohrbach. Customers are offered complete solutions in the area of electrical engineering, from planning to implementation.

User nodes

Currently, the 70 autoclaves are operated 24/7 by 140 operators and supervisors in three shifts.

Tags/communication points

Each autoclave control system uses a 1500-point license, and the supervision system uses an unlimited tag license.

Engineering time

Within four months, Rohrbach had delivered the first Autoclave application.