

Amadori Group, GESCO Consorzio Cooperativo

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Carlo Caramanico
Software Support
Cid Engineering

The Ideal Temperature

Goals

- Optimize temperature management during meat processing steps
- Ensure traceability, with exact temperature data for every step: processing, stocking and preservation
- Deploy a system that improves plant efficiency

Challenges

- Difficulty in software migration from an outdated version to a highly innovative and scalable system
- Create a temperature control system that adjusts according to the external weather conditions

Solutions and Products

- Wonderware ActiveFactory
- Wonderware InTouch HMI
- Wonderware Historian

Results

- Solution enabled compliance with government regulations
- Optimized production cycle and energy management
- Automation of the production cycle helped eliminate manual data entry errors
- The solution was initially only implemented in limited departments, but has now been deployed in all other process areas

Teramo, Italy - Amadori is one of the market leaders in the food processing industry. Founded in San Vittore di Cesena forty years ago, the Group - with a turnover of over 1 billion euro in 2008 - leads the Italian market with 16 industrial plants , 33 subsidiaries and it 6,400 employees.

Amadori has been successful because of its innovation and decision to manage the entire production cycle directly, allowing immediate control over every production step. This includes the choice of raw materials, farms, hatcheries, feed mills, processing plants, packaging and distribution.

Tradition and innovation are the Group's hallmarks: it is comprised of a professional team that presents innovative gastronomic solutions and works to deliver fresh and safe products to consumers. In the processing plant in Teramo, where breaded products and the "Il Campese" line are produced, full temperature control is essential to ensure high product quality.

The popularity of the Amadori Group has greatly increased in the past few years, thanks to advertisements featuring company testimonials and the "guaranteed by Francesco Amadori" slogan. By emphasizing the high quality of its poultry products in various versions, the company is sending out a strong and important message.

The Ideal Temperature

One of the most important challenges facing industrial plants is guaranteeing a consistently high level of quality.

The most sensitive part of production is the correct management of temperature, both in the processing and in the stocking and preservation steps. Temperature must be kept constant in the cold stores used in the preservation of slaughtered meat in order to prevent it from quickly spoiling.

It is important to avoid guesswork in the temperature settings during the processing steps and every department is constantly monitored to prevent the modification of temperature metrics.

A high temperature, for example, could favor microorganism growth, risking product quality. On the other hand, if the temperature is too low, the meat would be difficult to bone.

This is strategic to global operations because difficulties in the separation phase can slow the production process down, affecting the entire supply chain. Moreover, if conditions are not optimized, part of the meat could remain on the bone, causing considerable waste that affects overall business profitability.

Growing Together

Because of these demands, Amadori is focused on deploying systems that are able to optimize temperature management during the processing and stocking steps.

"That is why Amadori has been investing in high performance control solutions that are able to support the company's business and expansion. At end of the past decade, we got in touch with Amadori for the upgrade of their existing Wonderware InTouch HMI," said Carlo Caramanico with Cid Engineering

This mutual collaboration consolidated during the years, and Cid Engineering has been supporting all of Amadori's upgrades and deployment of new platforms.



"Amadori has always been asking for the most innovative solutions, aware that technological innovation allows them to remain competitive in the market. This vision led to the deployment of Wonderware platforms. The selection has been determined by the fact that, as qualified partners, we are highly experienced in these applications, as well as the fact that Wonderware has been introducing new and innovative solutions that are capable of meeting the complex demands of the Amadori business," said Caramanico.



Quality and Savings

Temperature management has been accurately studied over the past years, specifically its effect on savings and energy efficiency. The old system was based on simple thermostats, which was characterized by excessively slow response.

Wonderware InTouch HMI (Human Machine Interface), on the other hand, allows for smart operation. The system is able to manage the activation of the air conditioning system according to actual needs and it also establishes the power needed to guarantee ideal conditions.

Aside from temperature values, air quality and humidity must also be taken into account. Humidity, in particular, must be kept within pre-set values in order to preserve a healthy environment for the operators in the processing plant. The Wonderware InTouch HMI nodes help analyze environmental conditions, helping in the control of the air conditioning system.

It is the ability to operate effectively that allows the system to turn on and off according to the different working cycles, in both the automatic calculations. By evaluating external conditions, the system determines the time necessary to reach the right temperature according to actual needs. This prevents early cooling of certain environments and eliminates the postponement of processing because optimal conditions have not been met.

The History of Temperature

The optimization of environmental metrics has a strong impact on product quality and the working conditions of operators. It also plays a decisive role in precise food traceability. Industry regulations require a trace back of all the operational conditions food has gone under and authorities consistently check this information. In many cases, large customers also want to verify the contractual compliance of the production processes.

In the past, all these values were entered manually by the operators. But this way of working caused considerable problems, both in the need to employ extra operators who manually transcribe information, as well as the high risk of errors that comes with human transcription. The Wonderware Historian software is specifically designed for the historicization and archiving of process data and helps solve this problem.

ActiveFactory software accesses all of this information and transform it into graphics and useful information that allows operators to visualize historical event-related temperature trends intuitively.

This feature helps with traceability and it also allows the operators to be immediately informed about abnormal operating situations. In this way, it is possible to respond quickly to cases of deviations from set values, many times before problems occur.

The Wonderware solution was also highly scalable. While initially only implemented in limited departments, the solution has now been deployed in all the other process areas, ensuring the optimization of the production cycle and energy management throughout the Teramo plant.

Recently, Amadori chose to replace the old S5 PLC with a newer Siemens S7 PLC. This has been successfully implemented without affecting the Wonderware automation solution. Once the new hardware had been configured, it was then immediately deployed, with no negative impact on the production cycle.

Thanks to the most innovative and advanced technologies, it is possible to ensure the highest efficiency levels that always ensure high quality products.



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