



Success story

Guglielmi Stagionatura

efficiency and precision for an
artisan product of excellence

How CAREL technology improved product quality and reduced energy consumption.

Where

Guglielmi Claudio S.r.l.

What

- two cold stores for cheese ripening, covering a total surface area of 8,000 m²;
- controlled temperature, humidity and ventilation to ensure optimal ripening conditions;
- integrated supervisory system to monitor and log the environmental variables.

Why

- improve product quality;
- 30% energy saving;
- faster maintenance;
- transparency for customers on how their cheese is aging.

Merenti Refrigerazione

Specialising in the installation of refrigeration systems, it has been a CAREL partner for two generations. The partnership is based on its recognition of the technological quality and reliability of CAREL solutions.

Guglielmi Stagionatura

Operating in the cheese ripening sector for more than 50 years, it stands out for the quality of the service it offers numerous leading Italian cheesemakers, in particular for hard cheeses. Recently, the company has also started its own production, combining traditional artisan methods with innovative technologies.

The challenge: ensuring optimum ripening

Ripening or aging is a crucial step in cheesemaking, as it gives the cheese unique aromas, textures, and nuances in flavour.

For best ripening, environmental parameters such as temperature, humidity, and ventilation all need to be carefully controlled.

While in the past cheese was aged in natural caves, today the processes are carried out in large rooms that replicate natural environmental conditions. Guglielmi wanted a technological solution that could guarantee stability and precision, while also trying to save energy.

The CAREL solution

Energy-saving ripening system

In the heart of the Guglielmi production site are two large buildings, each covering 4,000 m², located in Valdastico, on the western side of the Altopiano dei Sette Comuni tablelands. Each building has its own automatic air change system, which overnight takes in moist outside air from the valley, helping to improve the quality of the ripening process.

A direct expansion system was installed in 2021 and upgraded in 2024 to optimise performance.



The cheese is stored on patented racks, and are aged for several months at temperatures that comply with PDO specifications.

To manage the climate parameters, Merenti chose the **c.pCO5+** programmable controller and a custom application, to ensure precise temperature and humidity control. The system uses advanced features such as free cooling, in which a damper is activated to let in outside air whenever the weather conditions allow, thus reducing energy consumption.

The **E3VS** electronic valves and **EVD EVO** drivers ensure accurate cooling control, while the external compressor rack managed by the **pRack pR300** controller optimises floating condensation pressure and heat recovery, bringing an **overall reduction in energy consumption of around 30%**.



Fig. 1.a - pRack mounted on the external rack



Fig. 1.b - pCO5+ and customised application

The CAREL control units therefore made it possible to meet the specific temperature and humidity requirements of the ripening process, with markedly lower deviations compared to the previous system, where such variations were even in the tens of degrees.

Continuous supervision and monitoring

To ensure the highest efficiency, the system was equipped with the **boss mini** supervisory system, capable of monitoring up to 50 devices. Connected via RS485 serial lines, the system centralises the data from the 16 active devices in the system, and sends notifications via email or Telegram in the event of alarms.

This solution not only makes maintenance much simpler and more timely for Merenti, but is also used to log the temperature and humidity data. Furthermore, Guglielmi offers its customers the possibility to access a dedicated web site, where they can monitor the status of their wheels of cheese in real time while they are aging.



Fig. 1.c - Monitoring is carried out both on-site and remotely, thanks to boss mini

The new creamery: innovation and artisan quality

In 2023, Guglielmi opened a new processing plant for the production of artisan cheese. Here they make high-quality cheese, including blue cheese and other specialities.

The ripening rooms are managed by **UltraCella** controllers, designed to maximise flexibility and adapt to different processing needs. Each room is equipped with a humidity and temperature control module, as well as electronic valves for precise management of the refrigeration system. The new plant is also integrated connected to the boss mini supervisory system, ensuring continuous monitoring and perfect synchronisation with the existing operations.



Fig. 1.d - aging room of the new dairy plant



Fig. 1.e - Ultracella installation

"CAREL technology has allowed us to improve control over the ripening of our cheese, bringing efficiency and energy savings, and therefore reducing our impact in terms of emissions. A result that confirms our commitment to product quality and care for the environment."

Claudio Guglielmi



Conclusions

Through its collaboration with Merenti Refrigerazione and the adoption of CAREL solutions, Guglielmi was able to optimise the ripening process, ensuring stable environmental conditions, lower energy consumption, and higher quality of the end product.



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