Success story

Pasticceria Veneta

A system that revolutionises the preservation of pastries with efficiency, control, and environmental responsibility

Thanks to natural refrigerants, DC inverter technology and smart supervision, the company has achieved a significant reduction in consumption, improved operational efficiency, and enhanced product quality. A forward-looking choice, implemented with the support of MD Service Refrigerazione, to face future challenges with sustainability and control

MDSERVICE
REFRIGERAZIONE

Where
Pasticceria Veneta
Cona, province of Venice, Italy.

What
A "future-proof" system that uses CO_2 and DC inverter technology.

Why
To upgrade the production plant to ensure energy efficiency, reduce environmental impact, and evolve to meet the challenges of future industrial refrigeration.

MD Service Refrigerazione
Based in Padua, Italy, the company specialises in the installation of refrigeration, air conditioning, and air treatment systems. It offers customised solutions and reliable technical support, with scheduled maintenance and on-call services.

Pasticceria Veneta
A renowned company producing artisanal pastries and baked goods, with a consistent commitment to innovation and sustainability. Founded by Dino Bisca and Loredano Grande, it has a long-standing tradition in the confectionery industry and is known for the quality of its creations.

Company context

Pasticceria Veneta, located in province of Venice, stands out for its focus on quality and tradition, along with its dedication to innovation and sustainability. With the expansion of its product range—including gluten-free and vegan options—and the need to reduce energy consumption and environmental impact, the company sought an advanced refrigeration management solution.

Reasons for the choice: green and future-oriented

Pasticceria Veneta chose CAREL solutions as part of a green transition of its systems, with the aim of creating a "future-proof" facility. Rather than seeking immediate economic return, the decision was driven by the desire to comply with European environmental regulations and invest in sustainable, long-term solutions. The adoption of natural refrigerants and CAREL's DC inverter technology represents a strategic investment to ensure energy efficiency, reduce environmental impact, and build a modern, flexible system that meets future standards in the food and industrial refrigeration sectors.

Fig. 1.a - Stage of the production process

The CAREL solution: technology and innovation

One of the critical stages in industrial pastry production is preserving the quality of frozen products to avoid changes in consistency, flavour, and aroma. For example, non-uniform or fluctuating temperatures can cause the formation of large ice crystals or ingredient separation, which compromise product structure.

For this phase, two cold rooms of 500 m^3 each are used, capable of storing products at -20°C.

Temperature maintenance in each room is ensured by two evaporators, each equipped with an E2V-Z electronic expansion valve with EVD Evolution driver and managed by iJW and IR33 Universale electronic controllers. The combined use of controllers allows modulation of the two evaporators based on temperature differentials and the operating time of each unit, increasing uniformity and reducing temperature fluctuations within the rooms.

For managing condensing units, the Hecu CO_2 controller was selected.
Using DC inverter-driven compressors from the PSD2 series, the Hecu CO_2 system enables real modulation of cooling capacity in CO_2 systems, resulting in low energy consumption, especially at partial loads.

Fig. 1.b - Hecu and PSD2 inverter mounted on the external rack

Fig. 1.c - iJW mounted on an external custom-made panel

Monitoring and alarms

The boss supervision system is configured to monitor up to 100 devices, ensuring the cold chain is maintained and certification requirements are met. To avoid any risk of product deterioration in the cold rooms, any alarms caused by temperature deviations are sent in real time via email.

Additionally, to enhance the user experience for Pasticceria Veneta, simplified access profiles and an overall plant view have been created using a site map displaying key data from monitored devices, such as temperature, charts, and automatic weekly reports, to meet HACCP system requirements.
To further optimise energy consumption, the supervision system centrally schedules defrosting operations, preventing simultaneous activations.

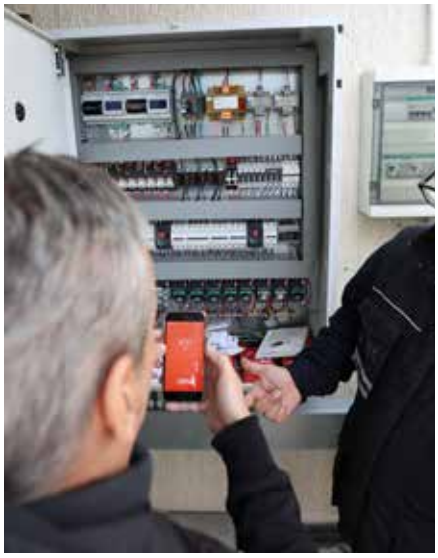

Fig. 1.d - Internal view of the panel with EVD driver and Ultracap

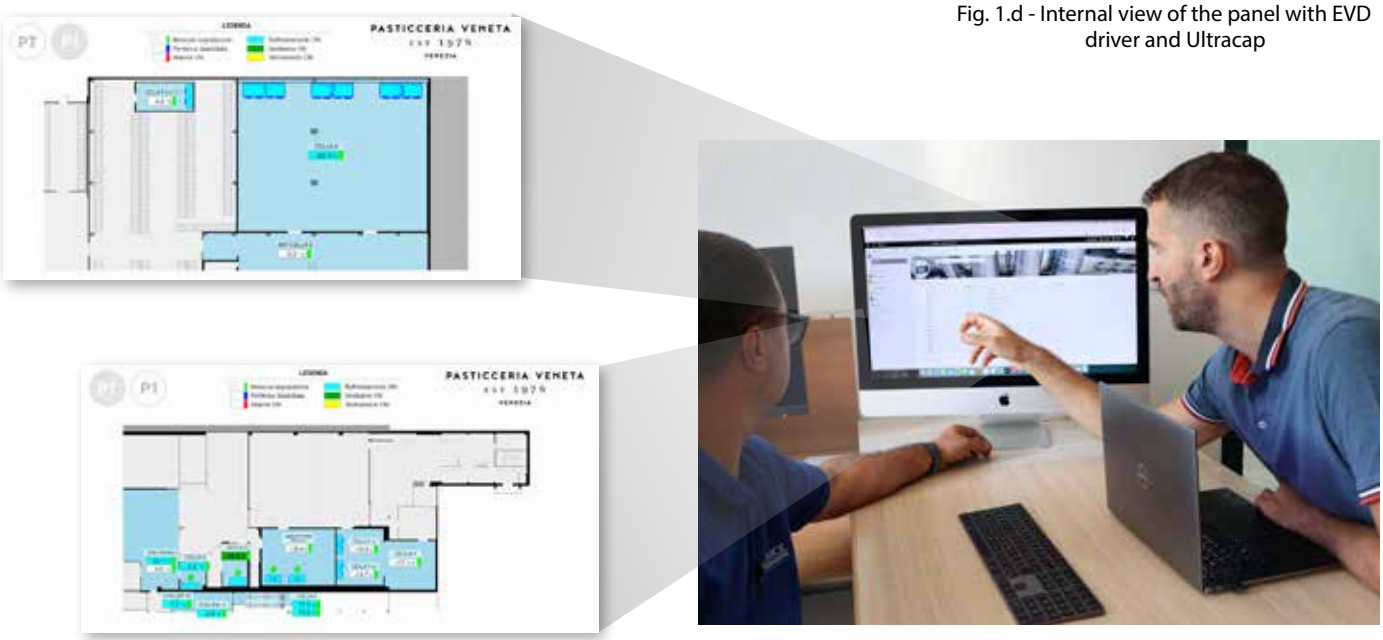

Fig. 1.e - Site map for monitoring the status of alarms

The importance of this journey is emphasised by the words of the company's founders, ***Dino Bisca*** *and* ***Loredano Grande****:*

"CAREL technology has enabled us to improve control over product preservation, combining efficiency, energy savings and sustainability. This result confirms our commitment to quality and environmental respect. Thanks to the professionalism of MD Service Refrigerazione, we were able to quickly integrate an advanced and customised solution, aligned with regulations and the needs of a market increasingly focused on environmental impact. This initiative represents for us a concrete step toward a more responsible and innovative future."

Conclusions

Thanks to its collaboration with MD Service Refrigerazione and adoption of CAREL solutions, Pasticceria Veneta achieved:

- **Improved product quality:** precise control of temperature and humidity has ensured optimal preservation conditions.
- **Green transition and sustainability:** by adopting natural refrigerants such as CO_2, the company reduced overall GWP for lower environmental impact.
- **Energy savings:** energy consumption was reduced by 30%, resulting in significant cost savings.
- **Operational efficiency:** remote management and continuous monitoring improved responsiveness and system maintenance.

This entire project has enabled Pasticceria Veneta to combine product quality, reduced consumption, and a green evolution.

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