

Case story

Ariete delivers **quality and competitive edge** using the **same drive** for fans, conveyors and mixers

100

VLT® Midi Drives save energy throughout the plant

The VLT® Midi Drive **optimizes efficiency** throughout the biscuit factory

The original equipment manufacturer Ariete uses the VLT® Midi Drive FC 280 throughout its machines at a biscuit factory in southern Brazil, winning competitive advantage which it can pass on to its customer, with the AC drive that adapts to different applications. At the biscuit factory, the VLT® Midi Drive is installed to ensure optimal efficiency of fans, conveyors, and mixers on seven production lines. All in all, there are 100 of these drives installed in power sizes ranging from 0.37 kW to 7.5 kW.

Founded in 1966, in São Paulo, Ariete manufactures equipment used in the production of biscuits, doughs and industrial bread making. The manufacturer is a supplier of equipment to the primary companies in this market, and it has its own 20,000-m² factory, located in Itaquera, Brazil.

Ideal match for the technical demands

Ariete designs and produces machinery and ovens that meet the specific needs of each client. Always focused on quality and technological innovation, the manufacturer chose the VLT® Midi Drive FC 280 drive from Danfoss for use in a biscuit factory project, in Rio Grande Do Sul.

“We needed a more competitive product, and that’s what we got with the launch of the FC 280, which provides safety and communication functions on an Ethernet network. We obtained a better technical solution than the one we had before, and we maintained the competitiveness of our machines,” says Marcos Rio, Ariete’s technical manager.

Ariete chose the VLT® Midi Drive with integrated EtherNet/IP communication interface for several good reasons.

Firstly, Ariete uses ring network topology in its machines. The VLT® Midi Drive is highly suited to this purpose with dual port Ethernet connection and Device Level Ring (DLR) support as standard.

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Integrated harmonic filter saves space and cost

Secondly, the power quality is extremely important to the biscuit factory operations, so harmonic

mitigation was a high priority. Therefore, the integrated harmonic filter in the VLT® Midi Drive was ideal for the purpose, saving on additional space and installation costs which would have been required for external filters.

All in all, with a wide range of functions intended to make the installation, use and maintenance of the drive as simple and easy as possible, the VLT® Midi Drive FC 280 is ideally suited to precise and efficient motor control for the manufacturers of machinery used in the production of food and beverages, as well as in the handling of materials and processing.

Easy to handle with fewer extra costs, thanks to integrated functions

The VLT® Midi Drive provides a high level of control performance, functional safety and flexible fieldbus communication. “The right combination of resources guarantees that the drive will adapt to different applications, whether it be transport systems, mixers and packaging systems, or fans and compressors,” explains Fagner Trevisan, a sales engineer for Danfoss.

The technical manager for Ariete emphasised the fact that, thanks to its integrated functions, fast and easy setup and low costs are among the main benefits to be derived from using the AC drive from Danfoss. Furthermore, it is not necessary to install additional cooling equipment or superdimension the drive, as the FC 280 drive is designed to operate in

The drives are installed in these central control cabinets.





VLT® Midi Drive FC 280 and VLT® AutomationDrive FC 302 with Integrated Motion Controller installed side-by-side.



In total, the biscuit factory boasts 100 installed VLT® Midi Drives, controlling equipment as varied as fans, conveyors and mixers.



VLT® Midi Drive provides a high level of control performance, functional safety and flexible fieldbus communication, combined with design features enabling speedy installation.

ambient temperatures of 45°C at full load, and up to 55°C with derating.

With all-pluggable connectors, integrated harmonics mitigation, RFI filter, and dual-channel STO functional safety, the drive is easy to use and there are no hidden extras. The VLT® Midi Drive FC 280 satisfies the most varied user requirements, thereby allowing fast and intuitive installation and configuration, cost reduction, space and flexibility.

Thanks to built-in harmonic filters, an external reactor is not necessary to make the machine more efficient. Furthermore, the number of accessories is reduced. The FC 280 is also very suitable for side-by-side bookshelf style mounting. These factors contribute to making the drive easy and fast to install, all while occupying a smaller space on the electric panel.



VLT® Automation Drive with Integrated Motion Controller functionality makes implementation of synchronization applications simpler and more competitive for Ariete and the biscuit factory.

Straightforward approach to synchronization

The biscuit plant also uses the VLT® AutomationDrive FC 302 with Integrated Motion Controller (IMC) functionality, on synchronization applications. In the past, applications requiring positioning and synchronization have typically used servo drives and additional motion controllers. However, such equipment is expensive and complex, and requires a high level of effort in relation to engineering, installation and commissioning. As servo drives use closed loop control, a feedback device is needed. This

adds to the complexity and cost, and is an additional potential failure source.

Did you know that many of these applications don't actually require the high dynamic performance offered by a servo drive? An alternative would be to use a standard AC drive but, so far, an additional external motion controller and feedback device on the motor have been required.

To reduce complexity and the need for additional modules or hardware, Danfoss Drives developed the Integrated Motion Controller (IMC)

in the VLT® AutomationDrive FC 302. As an innovative alternative to complex motion controllers, IMC offers high-precision position control as well as multiple features for positioning and synchronizing with a standard AC drive. Position control can be achieved with or without a feedback device depending on the required functionality and performance.

The VLT® AutomationDrive is also equipped with the EtherNet/IP option card in the biscuit plant applications.

About Ariete

Founded on February 10, 1966, Ariete is a significant player in the food industry, guaranteeing quality, safety and durability in its equipment for the production of biscuits and industrial baking. Its Itaquera - São Paulo site has an area of 20,000 m².

Ariete aims to improve the technology of its equipment every day by providing quality

service to all its customers. It develops and designs equipment and furnaces according to the specific needs of each client. Ariete acts as an authentic partner, placing at the disposal of the market more than 5 decades of knowledge in the production of equipment for the food industry. Therefore, it is qualified to provide advice ranging from the building of the factories to the preparation of the final product.

Ariete can ensure quality because it manufactures every item of the production line in-house, from the kneader to the final stage before packaging, electric ovens, oil ovens and the latest technology in direct gas, cyclothermal and convection ovens.

www.ariete.com.br

Danfoss Drives, Ulsnaes 1, DK-6300 Graasten, Denmark, Tel. +45 74 88 22 22, Fax +45 74 65 25 80, drives.danfoss.com, E-mail: info@danfoss.com

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