

The background of the entire image is a close-up, slightly blurred view of an industrial ice cream factory. Several mechanical dispensing nozzles are visible, each positioned to fill a waffle cone. The cones are arranged in a line on a conveyor belt. The lighting is bright, highlighting the golden-brown texture of the waffle cones and the white color of the ice cream being dispensed. The overall scene conveys a sense of precision and automation in food production.

CONTROL 
TECHNIQUES

EXCELLENT PRECISION & CONTROL

ALGIDA ICE-CREAM FACTORY | FOOD & DRINK

DRIVE OBSESSED

PROVIDING MASS PRECISION CONTROL

The Unilever-owned Algida ice-cream factory in Caivano, Southern Italy is one of the largest of its type in Europe, producing around 1.4 billion items each year – or 250 every minute. When dealing with such large quantities, marginal errors can be hugely wasteful and expensive, and the production process requires precise motion control at every stage.

Overview

- Highly configurable
- Plug-in modes
- Programmable application modes

The Challenge

From portion control and assembly, through to the packaging and palletising section, the Algida ('Walls' in the UK) plant's ability to produce ice cream products on a vast scale relies on precise motion control.

Special-purpose machines, along the line, portion and shape the ice cream, add additional ingredients, and insert the stick. The completed ices are then wrapped, sealed and packaged prior to palletising ready for despatch.

The Benefit

Unidrive SP is the world's most advanced 'solutions platform' AC drive, it is configurable into five operating modes, connectivity to most industry standard networks and accepting 14 position feedback protocols.

With a range of plug-in module options, its on-board PLC can be supplemented with high-end PLC processors, customer programmable application modules are also offered with a library of software solutions.

The Solution

Unilever relies on variable speed drives from Control Techniques for a range of control and positioning applications throughout the factory.

On the 100-metre long Magnum and Solero lines, for example, around 50 Unidrive SP AC drives in servo mode and fitted with programmable SM application modules are twinned with Unimotor servo motors for a range of multi-axis position control applications.

Control Techniques drives provide the precision and control for the multi-axis machines. A six-axis machine provides the exact portioning of each ice cream, using a flying-shear cutting technique, with cam software ensuring that the correct length, speed of flying shear and right angle is achieved. A fine tolerance must be achieved in order to maintain the minimum weight required for portion control and this target was achieved with the help of a Control Techniques engineer. Further machines with Control Techniques multi-axis servo control include packaging machines that plastic wrap, seal and insert the ice creams into boxes.

