

AUTOMATION

case study

Cool Control in Unilever Ice-Cream Plant

In Europe's largest ice-cream plant, owned by Unilever, variable-speed drives from Control Techniques play a crucial role in the production process – wherever precise motion control is required, from portion control and assembly, through to the packaging and palletizing sections.

The Challenge

Precision control across the entire factory.

"We have supplied drives to the Algida ice-cream plant in Caivano for some years," explains Gregorio Del Vecchio, Control Techniques' Area Manager. "In the last year alone, we have supplied around 60 Unidrive AC drives, for a range of control and positioning applications throughout the factory."

Control Techniques is the preferred drives supplier for the south-Italy ice-cream factory, which produced some 176 million litres of ice-cream in 2004, equivalent to 680 million portions! In many applications, Unilever has specified Control Techniques as the only drives supplier, particularly where the highest precision is required.

The Solution

On the 328 ft (100-meter) long Magnum and Solero lines, for instance, around 50 Unidrive AC drives in servo mode and fitted with programmable Application modules are twinned with Unimotor servo motors for a range of multi-axis position control applications. The ice-cream is produced from a range of ingredients including cream, sugar and flavourings, then mixed and frozen. Special-purpose machines, along the line, portion and shape the ice-cream and add additional components, including chocolate or fruit-juice coatings, and insert the stick. The completed ices are wrapped and sealed and packaged prior to palletizing ready for shipping.

At each stage, Control Techniques drives provide the precision and control for the multi-axis machines. For example, 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.

The Benefit

The Unidrive is the world's most advanced 'solutions platform' AC drive, 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.

Control Techniques' drives are also specified for portioning and packaging applications in two other Unilever ice-cream plants in Cisterna and Cagliari as well as at Caivano. Drives are sold both directly to the plants and indirectly through integrators. As a result, Control Techniques have accumulated considerable experience in the particular requirements of the ice-cream industry.

KEY BENEFITS

- Precise motion control
- Multi-axis position control
- Local support
- Industry expertise & experience

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