

## Biscuit company improves reliability of process control



### ABB general machinery drives control the main processes

LU Finland Ltd. has fitted two ABB general machinery drives to control the processing of its key brand, Domino, which has been on the market since 1953. The company, part of Groupe Danone's international LU biscuit brand, is the biggest biscuit producer and market leader in Finland.

Jani Suominen, LU Finland operations director, stresses that reliability is the quality they value most when choosing the drives. "The production lines with all their conveyors are hundreds of meters long, the ovens alone measure some 60 to 80 meters. The conveyors involve a great number of moving parts, and we cannot afford to compromise our production by using equipment that doesn't meet our requirement for 100 percent reliability."

One of the two AC drives controls the screw conveyors that dose and sift the flour and

sugar needed for making the filling for the Domino brand.

The screw conveyors dose the powdery ingredients onto the scales, and the dosing accuracy is the critical requirement here. The start and stop signals and speed selection commands to the drive are supplied by the PLC, but the acceleration and deceleration ramps and speed references set in the drive are necessary for achieving the required dosing accuracy.

At the beginning, the dosing is rough and the screw rotates at a high speed. When the automation system detects that the weight on the scale is approaching the target, around 10 kg less than the quantity specified in the recipe, for example, the drive's reference value is reduced. The screw then starts to rotate slower to enable more accurate dosing.

"We make 150 to 200 kg of filling at a time. We aim for maximum dosing accuracy, although



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## Case Notes

certain margins are acceptable depending on the product, as with sugar, for example”, Ari Ylitalo, LU Finland engineering supervisor, says.

The other ABB general machinery drive is the main drive at the filling machine. “This is a critical application and the ABB drive does a good job in controlling the key process of our flagship brand”, Ari Ylitalo comments. The controlled motor is a 2.2 kW, 400 V ABB induction motor, with a speed of 1,430 rpm.

”The process on the filling machine is a continuous flow, and the drive must be capable of a high static speed accuracy. The process doesn’t allow any rippling or fluctuation in the speed”, Ari Ylitalo emphasizes.

ABB general machinery drives enable fast speed ramp at the start and smooth stopping at the end. This ensures that the process runs in a controlled manner from beginning to end.

”The reliability of the control is the most important feature for ensuring a continuous flow of the process. The ABB drives have been in operation for almost a year now and fully meet our requirement for 100 percent reliability. The fast and simple commissioning of the drive and ease of use are also important benefits. Furthermore, a small physical size is a great benefit when components are being upgraded without replacing the whole switchboard”, Ari Ylitalo states.

### Solved problem

- Need to ensure the reliability of the process control.

### Solution

- ABB general machinery drives control the critical application and the main processes.

### Benefits

- Reliability of the drives enable continuous flow of the process.
- Need for maximum dosing accuracy and high static speed accuracy are met.
- Fast and simple commissioning.
- Drives are easy to use.
- Small size of the drive is a benefit if upgrading is needed.



**ABB Oy**  
Drives  
PO Box 184  
FI-00381 Helsinki  
Finland  
Tel: +358 10 2211  
Fax: +358 10 222 2287  
[www.abb.com/motors&drives](http://www.abb.com/motors&drives)