

# Food and Beverage Applications For ABB Adjustable Speed AC Drives

Adjustable Speed AC Drives helps  
streamline biscuit production line

ABB AC Drives

## Background

Fazer chose 12 ABB Adjustable Speed AC Drives ranging from 3 to 20 kVA to control a total of 21 motors on its fully automated, digitally controlled biscuit production line.

## Crisp production techniques

Dough is fed into the biscuit machine and formed into a wide sheet or web, the thickness of which is determined by several gauge rolls.

With the production of 'soft' biscuits, dough is fed at a rate of 0.69 tons per hour, straight to the sheeter section, where it is cut into the desired biscuit shape.

However, if 'cracker' type biscuits are being made, then every hour nearly a ton of dough is reduced from 3/4" sheet thickness to between 1/10" and 1/20" and the sheet is laminated by folding it on top of itself. These laminations produce the 'cracker' effect.

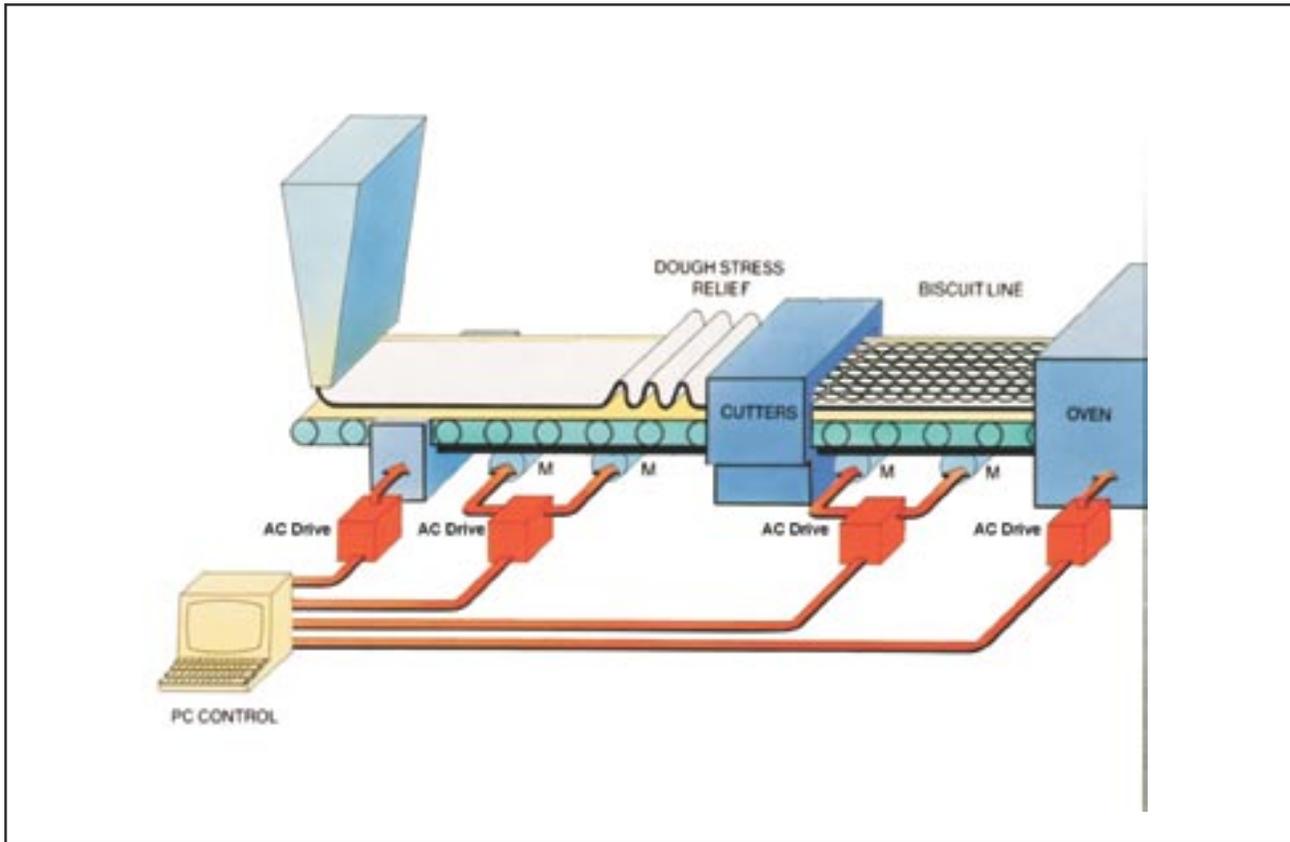
The sheet passes onto the ABB AC Drive controlled conveyor. There it is stress relieved to ensure no distortion of the biscuit after cutting. Scrap dough passes to another conveyor and is recycled. The laminated sheet then enters the oven.

## Total automation – the logical solution to speed control

AC Drives provide Fazer with the facility to incorporate programmable logic controllers (PLCs) within the control system. By using PLCs, the process speed can be adjusted and individual motors trimmed accordingly.

A 4 – 20mA signal is picked up from the oven band drive and provides a basic speed reference signal for total machine control to other parts of the production process, including the oven's temperature regulation.





The ABB AC Drives' full digital control allows it to be interfaced as part of a modern process control system using a serial communications program. All alarm functions are displayed on a video screen and control of all Drives and motors is achieved from a single keyboard.

**From energy savings to clean machines**

Although the ABB Drives have enhanced several aspects of the production process, they were primarily purchased to replace inefficient eddy current couplings, which consume vast amounts of energy.

Priority in any food-related installation is given to maintaining high levels of hygiene. The squirrel cage induction motor is a clean standard AC machine, which stands up to the rigors of variable speed without demanding the level of maintenance of other motors.

The induction motor's totally enclosed design and spark free characteristics are essential for areas where fine powders create a hazardous environment.



**Total Customer Satisfaction**

The quality of ABB drives is backed by a company-wide commitment to total customer satisfaction. ABB's 24-hour customer support line, plus an extensive sales and service network, provide a wealth of drives applications expertise and personalized assistance that will ensure your continued success.

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APPnote09-US-00