

The drive to produce more Pot Noodles



When you are eating a Pot Noodle – Britain’s biggest instant hot snack food – do you ever wonder how it’s made? Probably not, but the answer can be found at Unilever Best Foods, at Crumlin in South Wales.

At this busy plant, making some 150 million Pot Noodle snacks per year, the aim was to boost production to meet the ever-increasing demand for fast-food ready in moments. Production lines have been improved reducing downtime and increasing throughput.

Production line three, which was recently automated to give greater reliability and production. “We have upgraded all three lines with Unidrive variable speed drives from Control Techniques,” explains project manager at Unilever, Mark Edwards. “Line three had been running Control Techniques Vector drives for 10 years, and these had performed well, but we wanted to bring the whole line under PLC control and so chose Unidrive with Profibus connectivity.”

“The result has been excellent, with the line exceeding its daily targets. The most crucial factor has been the synchronisation of the drives from the process end right through to the packaging section.”

The line comprises a number of pasta mixing and processing operations, and a feed into the next section completes the packaging process.

There are 12 Unidrive on this section of the production line, varying from 1.1 kW for the fryers, up to 7.5 kW for the roller drives and communicating via Profibus with the PLC. Each motor on the line (Leroy Somer MV AC motors) is fitted with an incremental encoder feeding back to its drive.

The speed of the line as a whole is taken from a reference on the rotary cutter Unidrive and is digitally locked, with a small off-set on two of the drives on the stretcher conveyor and steamer to provide slight stretching of the noodles. Adjustment of this off-set gives a direct correlation with the weight of the noodles in each pot.

If any drive fails, the line stops, the exception being the sheeter drive, whereupon the line will continue until all noodles have been processed. In the cutter section, three drives are in a separate control loop, with absolute encoders providing precise synchronisation. At the end of this section, an additional encoder provides a reference signal for the subsequent packaging section.

“The PLC only provides initiation and switches on fans and pumps,” says Mark Edwards. “All of the programming is on the co-processor modules within the drives themselves. This gives us added flexibility if there is a problem and means that the whole line doesn’t stop unnecessarily. We find that Unidrive is ideal and all three lines are fitted with them (a total of 31).”

KEY BENEFITS

- INCREASED THROUGHPUT
- REDUCED DOWNTIME
- GREATER RELIABILITY
- ADDED FLEXIBILITY



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