

Drives save the day at Danish Dairy



When an elevator in a cheese drying system broke down at a Danish dairy, the entire plant was brought to a standstill with a loss of some five tonnes of cheese per hour – an estimated cost of £40,000 per shift. The suppliers estimated that it would take a fortnight to get the parts to rectify the situation. Engineering staff were facing the possibility of having to remove stocks of unfinished cheese to warehouses elsewhere in Denmark, with storage and transport costs escalating as time went on.

“We already used drives from Control Techniques elsewhere in the plant, so I contacted the Control Techniques Drive Centre in Greve. Control Techniques engineers replaced the existing software with their own elevator software and managed to get us up and running again later that same day,” says Per Hansen, Chief Electrical Engineer at MD Foods’ Rødkærø Dairy in Denmark.

“We had been having constant problems with the original programming,” explains Mr Hansen. “It was written in such a way that we couldn’t adjust the programming ourselves and we had already spent some 80,000 crowns (£8,000) trying to get it right. In one day, Control Techniques achieved what the manufacturers could not. But it was a temporary fix and we asked Control Techniques to give us a better permanent solution.”

Some months later, Control Techniques Denmark carried out a complete rebuild of the elevator control system utilising Unidrive AC drives and Unimotor servo motors under the overall control of the existing PLC controller. Each of the Unidrives, working in servo mode, is fitted with the unique Control Techniques plug-in Application Modules. In co-operation with the supplier of the PLC controller, Control Techniques software engineers completely rewrote the positioning software.

The instruction comes from the PLC, but all of the positioning is now carried out by the software within the Unidrives’ own Application Modules, completely eliminating any further operational problems.

The elevators feed 200 gm packs of cheese into, and remove them from, a 21 level cheese dryer. Packets of feta and mozzarella cheese are cooled and dried in long tunnels, prior to being sent to the packing department. The PLC selects the level for each pack of cheese and the Unidrive servo system then takes over, moving the elevator adjacent to the chosen track, where it is pneumatically pushed onto a slow moving conveyor.

Feedback is from shaft-mounted encoders on the Unimotor brushless servo motors.

“The system now responds faster and more accurately,” says Per Hansen, “and, above all, reliably. Reliability is my number one requirement in this production facility,” he goes on. “Each week I have to answer for every minute’s lost production – and what I am going to do to eliminate weak points. That’s why I have used Control Techniques drives – with back-up from their local Drive Centre – ever since this plant opened in 1989.

The first drives I bought were 7.5kW Commander CD drives for the pumps in the new water treatment plant and I’ve used their AC drives ever since. I did try some other drives – what a mistake that was! We are 100% AC, because of the damp and corrosive atmosphere throughout the plant – and all motors are sealed because of all the constant washing down with high pressure water and steam that is needed for hygiene reasons.”

Unidrives are used in various locations, “but we were not using the Application Modules anywhere else besides the drier,” says Mr Hansen, “although I plan to do so, because it will make maintenance so much faster and easier. If I have to change a drive, there’s no reprogramming of parameters – just plug in the module and off it goes. If it saves even five minutes, it’s a good investment.”

“This is a very busy plant,” concludes Mr Hansen, “and any stoppage has major cost implications. That is why I have to have complete confidence in my drives and in the local support that is available. With Control Techniques, I have both!”

KEY BENEFITS

- FASTER SYSTEM RESPONSE
- INCREASED ACCURACY
- IMPROVED RELIABILITY
- 24 HOUR LOCAL SUPPORT



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