

Control Techniques Provides Sweet Solutions at British Sugar



British Sugar Cantley has specified variable speed drives from Control Techniques for their new beet finisher drum, with associated high pressure spraywater pump. Unidrive SP drives from Control Techniques, ranging from 3 kW up to 250 kW were selected for all of the key motor control operations, an investment in excess of £1 million by British Sugar.

The new plant provides thorough cleaning of the beet at the start of the process, reducing the amount of sand, dirt and stones entering the processing line, cutting damage from abrasion and reducing general wear and tear further down the line.

“Control Techniques is our drive of choice for a number of reasons, they give us increased reliability, compared with other drive systems” says Graham Goodrum, Electrical Engineering Team Leader at British Sugar Cantley. “We find the drives easy to use – we particularly like the SmartCards that cut parameter set-up times. They are ultra-reliable, reducing our maintenance costs and, very important for such a safety-conscious site, they include a safe torque off function. The applications modules allow direct communications with the rest of the plant and, on some applications, such as the beet finisher, there is a huge start-up torque and the Control Techniques drives give more than 180% start-up current to get it moving. The closed loop vector mode gives us positive, accurate feedback of machine speed, so that we can be confident that everything is operating within safety limits.”

The upgraded ‘Maguin’ beet washing plant comprises a rotary drum driven by two variable speed electric motors, a high pressure spray water pump, a new stone catcher and a sand screen.

The beet finisher drum is driven by two 40kW AC motors and controlled by two 30kW Unidrive SP AC drives, configured to share the load equally – a 45kW Unidrive SP is also fitted to provide back-up. The high pressure 150 PCH Warman water spray pump, powered by a 4-pole 250kW motor is controlled by a Unidrive SP, the mini stone catcher is controlled by a 3kW Unidrive SP and the sand screen has a fixed speed 0.75kW motor.

“There are a number of electrical safety features on the plant which are designated as ‘safety critical’ and have been engineered to comply with required safety standards. “In this context, all of the Unidrive SP drives feature a safe torque off feature,” explains Graham Goodrum, “which meet EN 954 and 574 safety standards, giving maximum safety to our maintenance staff when they are working on potentially hazardous machinery.”

A new Control Techniques cubicle drive, rated at 160kW has also been fitted to provide control of a high pressure, 15 barg / 220psig main condensate pump nearby.

“We have around 100 Control Techniques AC drives installed in the plant,” adds Graham Goodrum, “on beet slicers, pumps, fans, elevators, mixers and on many other pieces of equipment, so we have considerable experience in their use. Control Techniques is always our first choice, because of the quality and functionality of the drives. We have a programme of switching to AC to reduce maintenance and to variable-speed drives rather than fixed speed to save energy and wear and tear on the plant. The bottom line is, that poor control reduces efficiency and reduces sugar yield,” he explains. “For example, beet slicers require precise speed control to ensure that beets are cut to exact chevron shapes, to give enough strength for pressing to give maximum yield.”

British Sugar, Cantley processes up to 10,000 tonnes of beet per day (producing some 1500 tonnes of sugar and 400 tonnes of animal feed) during the ‘campaign’, which lasts some five months, finishing in February. “It’s a tough environment,” concludes Graham Goodrum, “but breakdowns cannot be tolerated. That’s why we buy what we believe are the most reliable drives on the market.”

KEY BENEFITS

- RELIABILITY
- INCREASED YIELD
- SAFE TORQUE OFF
- PLANT COMMUNICATIONS
- ENERGY SAVING
- REDUCED MAINTENANCE



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