Project Profile

10223 Food Process Machine
Throughout 2010

Summary and Customer Goals
A food processing customer worked with a custom machine fabricator to develop a proprietary method for extruding, forming and cutting a dough product. This was an upgrade to a previously designed machine from 2004. The Logicon Group was approached to use the original machine’s program as a base design for developing a new program that matched the capabilities of the new machine. This included upgrading to the latest technology standards in use by the customer.

Hardware, Software & Networks

- Allen-Bradley ControlLogix L61
- Allen-Bradley Panelview Plus 1250
- Allen-Bradley Kinetix 6000 Servo System with MPF Motors
- Allen-Bradley PowerFlex 40 and 70 drives
- Dukane Ultrasonics
- Prosoft Generic ASCII Module
- Ethernet, Sercos, ControlNet, DeviceNet, RS232

Detail
System configuration consisted of distributed I/O on ControlNet, PowerFlex VFDs on DeviceNet, Kinetix 6000 servo drives on Sercos, and command messaging to the Ultrasonic generators over RS232 using ASCII codes.

Due to the confidential nature of the machine, the specific process cannot be discussed. The machine extrudes the product continuously into the machine. Based on a recipe selection, individual ultrasonic knives are activated to form a cut pattern on the dough. They are presented into the product and retracted from the product in time with the process via a virtual axis and Position CAM instructions in the ControlLogix. The recipe also controls the amplitude and on/off timing of the ultrasonic blade to form a balance of product quality and ultrasonic blade longevity.

Interlocks to the process include the firing of a card feeder machine and the application of topping via a vibratory feeder. Logicon also provided complete process line integration for machine interlocks. Machines in the process line include the card feeder, process machine, checkweigher, wrapper, conveyors, metal detector, case sealer, and label applicator.

The Results
The Logicon Group provided the upgraded control system design, programming, and panel construction as well as all on-site installation and start-up support. In addition to the machine development, Logicon was able to provide additional design and programming services for other custom designed equipment such as the product feed pump system, a card feed system, and the downstream conveying system. The completed machine design was a success and has a higher OEE than its predecessor due to the functionality and troubleshooting upgrades added by The Logicon Group.

Call The Logicon Group today if you’d like to achieve Innovation through Controls Technology.

Mike Pollmann  March Whitney
314.277.8446  618.558.7757
mike@thelogicongroup.com  marc@thelogicongroup.com

Rev. 11.29.2011