



A Rockwell Automation Company

Midwest Food Products Inc. Line 2 Dryer Upgrade

The Client:

Midwest Food Products Inc. located in Carberry, MB (40 kilometers east of Brandon, MB) is a corporation controlled by Nestle Canada Inc. and Simplot Canada Limited. Midwest Food's main

product is French fries, potato patties and powdered potato flakes for customers such as McDonald's and Wendy's.

The Requirement:

To update Line 2 Dryer with modern PLC and process control equipment. The operating philosophy is to incorporate measurement control algorithms and feedback loops to control the

drying process of the fries coming from the blancher.

The Design Solution:

The four burner units were upgraded to provide a wider range of heat control allowing precise temperatures at low and high air flow speeds.

Instrumentation for measurement of Bed Depth Level, air temperature in key areas, air pressure, airflow rates and relative humidity were installed for automated control.

Intake and exhaust fan motors were upgraded with variable frequency drives for variable airflow rates.

The field control panel was eliminated and a Wonderware screen was incorporated for control from existing HMI terminals.

A Modicon Quantum 434 CPU with local I/O was selected for control of the discrete on/off equipment. RTD modules were used to bring temperature data directly to the PLC via RTD sensors. 4-20 mA signals to analog input modules were used for the remaining instrumentation inputs.

A Modbus Plus Head module was added to the primary rack of the PLC to provide an independent Modbus Plus network for all VFD

control. All start/stop and speed command settings are carried out through this communication network eliminating a significant amount of control wiring.

The plant wide Modbus Plus network is connected using the MB+ port on the processor.

Existing Wonderware terminals communicate over Ethernet to Wonderware client and tag servers. Established policy has the tag server gathering all PLC data through a single Quantum PLC acting as a bridge. The bridge PLC has a NOE module installed for this purpose.

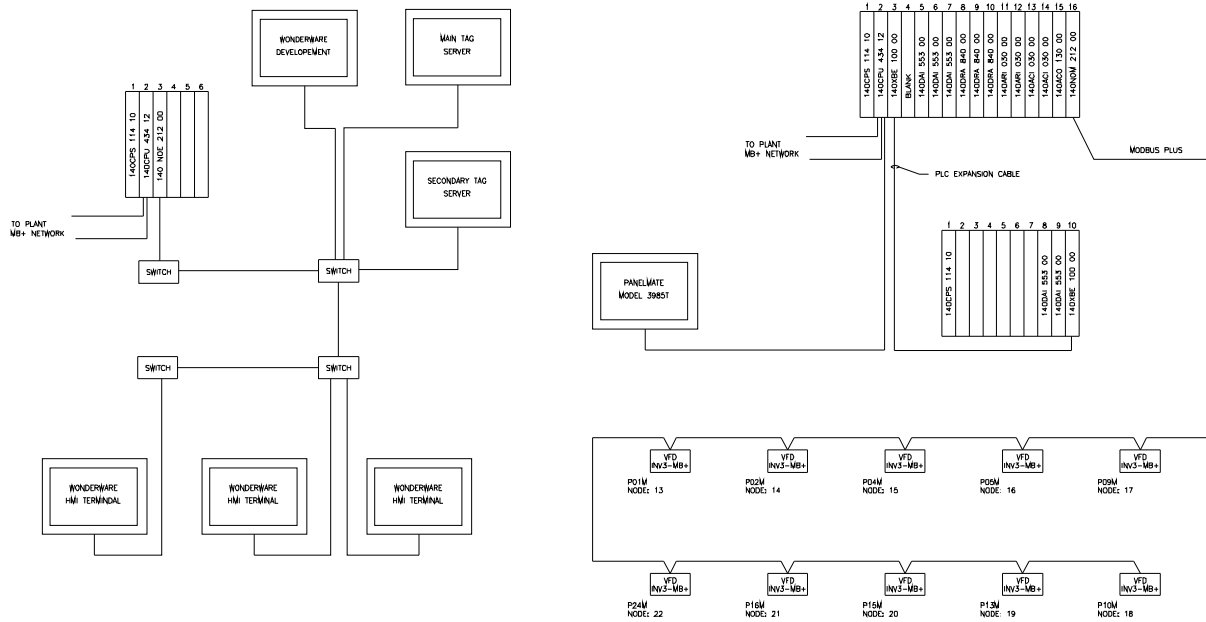
As a backup, a PanelMate HMI has also been installed from which all necessary control can be established in the event of an Ethernet system failure. The PanelMate communicates through Modbus, utilizing one of the two Modbus ports of the processor.

A unique method of information sharing was developed for this situation with the bridge processor transferring information for Wonderware and the PanelMate being capable of transferring the same information



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System Specifications:

- 2 Modicon Quantum 434 CPU
- 1 Modicon NOE Ethernet module
- 1 Modicon Extension Rack
- 1 Modicon PanelMate 3985T
- 1 Modicon MB+ Head module
- 155 Digital I/O
- 34 Analog I/O
- 9 PID control loops
- 10 Toshiba G3 drives with MB+ boards

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com