



A Rockwell Automation Company

Canbra Foods Limited Oil Products and Margarine Plant

The Client:

Canbra Foods Limited is the largest publicly-owned, fully-integrated oilseed processor in Canada. Utilizing primarily canola seeds, the company crushes, refines, processes, packages, and markets canola cooking oil and related consumable food products. Products are sold in packaged form to retailers and distributors in

the food service industry and in bulk to manufacturers.

The Lethbridge based facility is comprised of a seed cleaning plant, seed storage, crushing, an extraction facility, refinery, and a margarine plant. Over 1,000 tons of food are processed every day at the Lethbridge plant.

The Requirement:

In 1986 Canbra Foods initiated construction of a new modern margarine and liquid oil production and packaging facility. The plant was to receive oil products from their adjacent oil seed refinery for packaging or blending in the production of margarine and shortening blends. Canola oil, in addition to soy, cottonseed, palm, and sunflower oils were to be processed. Margarine production is essentially the blending of oil with pasteurized milk. Process control for the margarine blending portion of the plant consists

of margarine oil blend storage, oil soluble addition, and milk preparation including: preservatives, brine preparation, milk whey mixing, milk pasteurization, and emulsion blending. The majority of control in the plant is directly related to margarine production. Product packaging is controlled separately by individual packaging machines

The Design Solution:

Canbra Foods Limited is a strong supporter of Allen-Bradley motor control products and PLCs. As well, their plant is standardized on Metra Graphics as their operator interface.

The Lethbridge Margarine Plant control system consists of an Allen-Bradley PLC 5/25 Data Highway Plus connected to the Refinery PLC 5/15. Metra 1010BT graphics units provide operator interface in both plants. The margarine PLC 5/25 interfaces to 5 Toledo weigh scales via ASCII basic modules to provide precise batch control of pasteurized milk and oil blending. RTD temperature devices are mounted on most of the 10 margarine process tanks to monitor product temperature and alarm low temperatures on the hot water-jacketed tanks and piping. The majority of the PLC I/O is field mounted to directly interface to MCCs for approximately 52 motors and 80 valves. Communications from the margarine plant to the refinery permits operator control of oil products

received from the refinery to ensure proper product type and temperature.

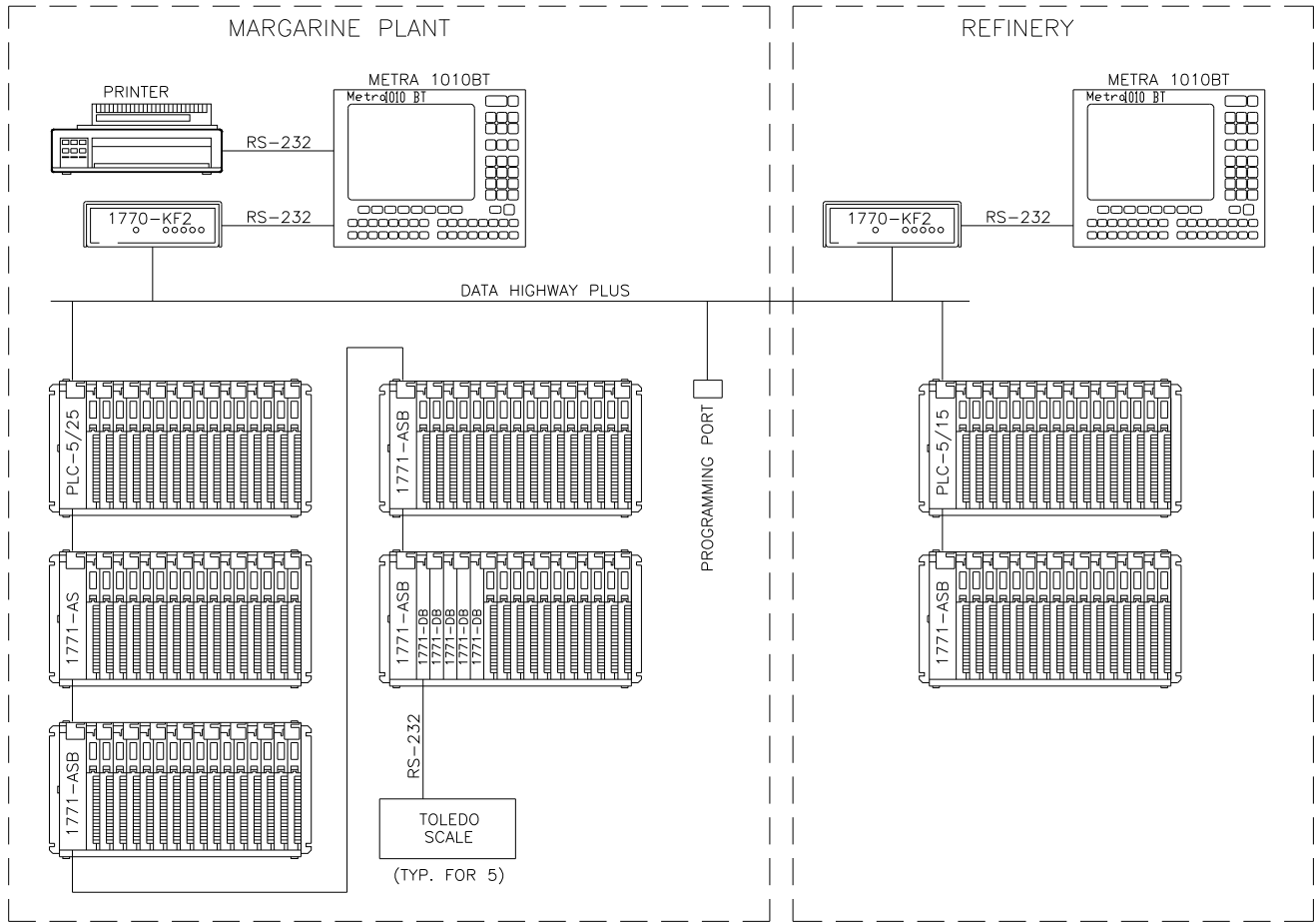
In addition to providing automatic sequence initiation, the Metra operator interface prompts the operator to ensure that manually added additives are recorded. Reporting is provided for oil solubles and milk production based on data received from the weigh scales. Milk reports typically include values for water, brine, preservatives, and display batch start and finish times. Alarming is included as well as PID faceplate interface for the 4 process control loops.

Hinz provided consulting services for all electrical, control, and instrumentation requirements.



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System Specifications:

- Allen-Bradley PLC 5/15 and PLC 5/25 Processors
- 2 Metra 1010BT Graphic Displays
- ICOM PLC 5 Programming Software
- 300 Digital Inputs
- 140 Digital Outputs
- 20 Analog 4-20mA Inputs
- 30 Analog RTD Inputs
- 4 Analog 4-20mA Outputs
- 5 RS-232 Toledo Scale Interfaces
- 52 Motors
- Batch Process and C.I.P. Control

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

www.hinz.com