



A Rockwell Automation Company

Alpha Milk Company Product Tank Gauging

The Client:

Alpha Milk Company is one of the leading milk and related milk product suppliers in Southern Alberta. The Calgary plant produces ice cream

products as well as many different types of milk.

The Requirement:

The original plant utilized a simple tubing arrangement connected to clear vertical display tubes to indicate 25 tank levels. This system required frequent cleaning of the long runs of tubing between the 25 tanks and the display board. This type of system did not allow for remote display of the tank levels.

The 25 milk tanks are of various shapes and sizes. Each of the milk tanks is mounted so that one end is lower than the other end. This allows the tanks to be easily drained and cleaned. Each tank also uses an impeller to slowly agitate the liquids to prevent settling.

Approximately 20 different milk products are selectable to fill the various tanks. Tank sizes vary from 1,200 liters to 135,000 liters. Alpha Milk required the new system to calculate volumes for each tank to within plus/minus 1 percent.

The Design Solution:

Pressure sensors were installed near the bottom of each tank at the low end. The changing pressure at the sensor will then indicate the amount of liquid above the sensor. Different milk products have unique densities. The actual tank shape, the product density, and the sensor pressure are used to calculate an actual product volume in the tank.

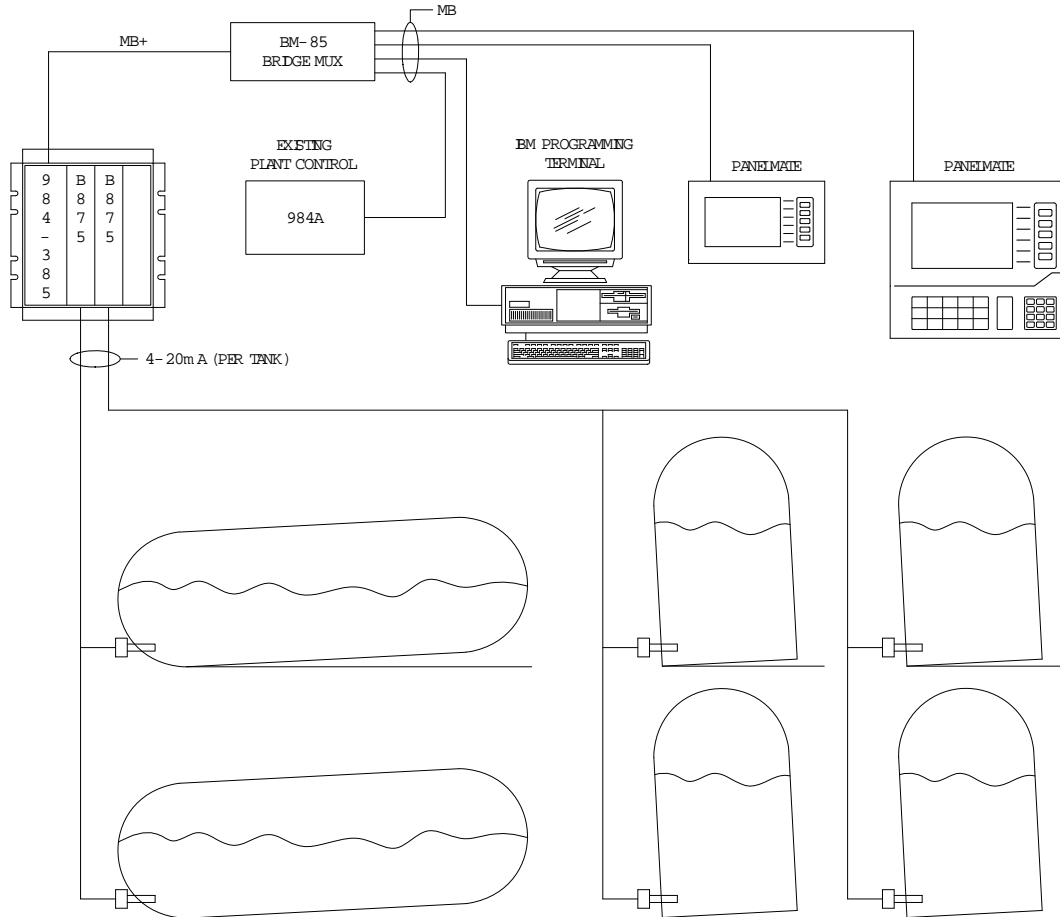
The pressure sensors connect to a Modicon 984-385 PLC. This PLC calculates the tank volume in

liters for each of the 25 tanks. The tank volume data is retrieved from the PLC by a Panel Mate display unit. This display unit is also used to send a product code to the PLC for each tank.



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System Specifications:

- 25 Cold Milk Product Tanks
- 18 Types of Milk Products
- 2 Panel Mate Operator Panels
- 1 Modicon 984A Programmable Logic Controller
- 1 Modicon 984-385 Programmable Logic Controller
- 1 Modicon Modbus Plus Multiplexer
- 25 Analog Inputs
- Modbus Plus Network
- 5 Graphics Pages

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

www.hinz.com