



Soap production benefits from the functionality of the Siemens MultiRanger Level Controller

Situation

Soap is made with either vegetable or animal fats, depending on the quality of the desired soap. Smaller amounts of other oils and fats are sometimes added to further enhance the soap.

A company in New England manufactures several soap products using a variety of ingredients. The customer needs to monitor the material in 19 different tanks at their production facility. The tanks are in groups of 4 to 6 and contain a combination of solids and liquid products. In addition to monitoring the tank levels, the customer needs to send the measurement data to their Ethernet network so personnel can view the data remotely.

Challenge

The company wanted to monitor the quantity in the tanks based on volume, which is derived from the level measurement. They needed a

system that had the ability to provide accurate level measurements. The local Siemens sales representative was asked to recommend a system that could accommodate their needs. In addition, the tanks were spread over a large area, which could substantially increase the cost for the project if cables had to be run from each tank back to a central location.

Solution

A system was designed that included the Siemens MultiRanger™ 200 Ultrasonic Level Controller. Volume conversion is a feature of the MultiRanger 200 controller. It has several standard tank shapes built into the software. Also, a user can build their own custom strapping table for a non-standard tank shape. The volume measurement can be sent to a PLC via the on-board Modbus RTU, which is standard. The PLC adjusts the volume based on the varying product densities.

Process Instrumentation & Analytics



The MultiRanger controller was able to accommodate all the measurement distances required, plus the Modbus RTU output allows multiple data variables to be transferred. The local Siemens sales engineer also proposed using the Siemens WiPS DR301 wireless radio transmitters for each group of tanks/level controllers to transmit the volume data from the tanks to a master radio. The wireless radio allows multiple signal inputs and transmission of the Modbus data from each controller. The master radio sends the output through a serial Ethernet converter directly to the company's Ethernet network.

Since there were no Ethernet terminals in close proximity to the tanks, the wireless transmitters saved the soap company the substantial cost of wiring to each device. The customer welcomed this approach as a major cost savings. Once the level/volume data was available on the customer's network, their engineers set up a web location so their personnel could easily view the data online.



Benefits

- **Cost savings:** Wireless transmission of the Modbus RTU data saved the company a great deal of money on wiring costs for the many tanks that were located a long way from the Ethernet terminals. Savings included both materials and manpower.
- **Ease of use:** The MultiRanger includes volume conversion and Modbus RTU.
- **Convenience:** Set-up and programming are simplified with a handheld infrared programmer or via SIMATIC PDM.
- **Reliability:** Sonic Intelligence – our field-proven echo processing algorithms guarantee the most reliable performance available.

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