

WIRELESS DATA LOGGERS HELP ENSURE DAIRY PRODUCTS SAFETY AND QUALITY

Environmental Monitoring Augments Clean-In-Place Systems in a Creamery



Recently CAS DataLoggers provided the environmental monitoring solution for a dairy manufacturer to augment their existing CIP (Clean-in-place) systems. Located in Fithian, Illinois, **Ludwig Farmstead Creamery** is a producer of European-style artisan cheese made with day-fresh milk from their own Holstein cows. First the cheese is crafted using day-fresh milk, then nurtured through an extensive aging

process.

After referring with a consultant in the dairy business, the creamery decided they wanted a wireless solution to monitor the temperature and humidity within their cheese aging rooms.

Background

Adrian Buff is the Head Cheese-maker at Ludwig Farmstead Creamery. Adrian hails from Davos, Switzerland, having previously apprenticed and worked in his native Switzerland.

Creamery consultant Fons Smits recommended that Ludwig Farmstead adopt the same wireless system installed in his own business, manufactured by **T&D**. Fons himself has since expanded his own T&D system.



Hardware

CAS DataLoggers supplied a T&D data logging system incorporating wireless data loggers to record and alarm both temperature and humidity levels. Meanwhile a wireless base station collects all the loggers' data and sends it to an office PC several rooms away.

The creamery's environmental monitoring system consists of:

- **RTR-500AW Wireless Ethernet Network Base Station x1**
- **RTR-502 Wireless Temperature Data Loggers x2**
- **RTR-507 Wireless Wide-Range Temperature & Humidity Data Loggers x3**

A T&D RTR-507 data logger now records the environmental conditions within each of the three cheese aging rooms in the building. Another data logger has been placed inside the creamery's walk-in cooler. These battery-powered temperature/humidity loggers simultaneously measure and record temperature from -30°C to +80°C (-22°F to +176°F) and relative humidity levels from 0-99% RH. T&D's design allows for automatic error-free downloads for convenient data collection and retrieval. T&D is equally versatile for use in storage rooms located in warehouses and restaurants.

Protecting Product Quality

The cheese-rooms and the walk-in coolers all have CIP lines (Clean-in-place) in place to ensure product safety and quality. These lines thoroughly clean and sterilize stainless-steel pipes and other process equipment without the need for disassembly.

Temperature naturally fluctuates between 52° and 55°F in the aging rooms. Every fifteen minutes, the data loggers take a temperature and humidity measurement of their surrounding environment. Readings in this range are of no concern, but the dataloggers are set to judge any reading outside of that as an alarm condition. When this happens, a warning message is sent to Adrian's phone via SMS text message, giving him time to take remedial action if necessary to save products. For example this could include servicing the HVAC system or moving his cheese products into another aging room for the time being.

Another temperature data logger is installed on a stainless steel pipe related to the processing operation and which has its own CIP line. The logger's display always shows the pipe's current temperature for when Adrian occasionally checks it: "At a certain point in the cheese-making process, we run chemicals through the pipe, which warms up to a maximum of 129°F. I just need to know if the pipe hasn't actually warmed up, which would indicate further investigation."

Electronic Documentation Proves Regulatory Compliance

Adrian also uses T&D to fulfill the dairy business's regulatory requirements, mostly in the form of 3rd-party audits. Formerly he had used paper chart recorders for this purpose, but Adrian explains, "Gradually we saw them as out-of-date. Whenever the paper ripped, you lost the readings for that day. This wireless system is much better for us to prove best practices."

The RTR-500AW wireless base station is installed in their office area. According to user-set schedules, this network base station automatically downloads recorded data from the loggers via built-in Wireless LAN Communication. The base station then transmits that data over the building's network to an e-mail address, FTP folder or T&D's own free WebStorage cloud server.

Business Benefits

Ludwig Farmstead Creamery now relies on the T&D wireless monitoring solution to monitor their product and process 24/7. This multi-point setup avoids the need for staff to have to take manual measurements or to use cumbersome paper chart recorders.

Bill Hoon, Application Specialist with CAS DataLoggers, who's also worked with several other creameries for similar applications, comments, "T&D is a great convenience and value for small businesses who want temperature monitoring for their Food & Beverage product. The manufacturer's cloud storage unit gives our clients a free way to get into wireless data storage for maximum access and transparency."

For more information on T&D Temperature Monitoring Systems, or to find the ideal solution for your application-specific needs, contact a CAS DataLoggers Application Specialist at (800) 956-4437 or visit our website at www.DataLoggerInc.com.