Cost Effective Wireless Data Loggers Protect a Family Sausage Business

Automated Temperature Monitoring System from T&D Corporation

In August of 2014 CAS Data Loggers provided the automated temperature monitoring solution for Longhini Sausage Co. Inc. in Connecticut, a family-owned business serving the Southern Connecticut area for almost sixty years. The business's products are found in many of the area's restaurants, delis, and supermarkets.

Sausage is a quality product but extremely temperature-sensitive. During storage if the product temperature rises above 35°F (1.6°C), owner Rich Loghini says he has a problem. He explains, "We load our trucks the afternoon before shipping the next day and on a given night I could have $15,000 to $20,000 worth of product loaded up in my trucks. Last year one of my refrigerated trucks went out of temperature overnight and this caused us to throw away over $3,000 of product due to a lack of alarms. After that I wanted to alarm the temperature in the refrigerated compartments so I would be notified if the temperature rises in the middle of the night."

Longhini began searching for an automated alarm system to monitor his refrigerated trucks (aka 'reefer' trucks). His primary requirement was for a wireless temperature monitoring system capable of remote alarm notification. Initial systems he researched came at a high cost, including systems expressly designed for tractor trailers. However, he didn't want extra functionality, just a reliable way to protect his product.

Effective Cold Chain Monitoring

After searching online, Rich Longhini contacted CAS Data Loggers. After describing his application and considering several systems, he decided on T&D's RTR-500 Wireless Data Logging System. CAS Data Loggers provided his business with three RTR-502 Wireless Temperature Data Loggers and an RTR-500NW Wired Ethernet Network Base Station to collect and sends the temperature readings via a 900MHz wireless transmission.

The three delivery trucks sit in the garage as they await the morning deliveries, each one with a T&D data logger mounted on the side in an exterior weather proof box. The T&D RTR-500 series loggers are compact for easy placement. Longhini installed the system himself, drilling a hole in the side of each truck and placing the loggers' external temperature probes in the warmest part of the refrigerated compartment, running them to the inside roof alongside the refrigeration unit's own probe.

The external thermistor sensors have a measuring range of -76°F to 311°F (-60°C to 155°C) to monitor product or environmental temperature in real time. Users can choose to record Celsius or Fahrenheit. Each T&D data logger has a large-capacity 16,000 point memory along with a battery life of about 10 months. However, Longhini opted for upgraded units with an optional large-capacity lithium battery pack enabling about 4 years of operation adding to the reliability of the alarm solution on all three refrigerated trucks.

Going Wireless

Post-installation, the wireless T&D system now continually monitors the trucks while they're fully loaded through the night hours. Each of the three data loggers automatically takes a temperature sample every ten minutes without any human intervention.

The T&D RTR-500NW is a network base station with built-in wireless communication and LAN capabilities. This device is located on the garage wall 50 ft. away from the trucks which is within the expected communication range of 500 ft. The RTR-500NW base station automates data retrieval from the data loggers and aggregates the data into one data file. The base station uses a 10/100BaseT Ethernet interface, to send the data to Rich Longhini's PC.

If needed changes to settings can be made over the network to travel out to the Base Unit. Alternately, other data collectors with are available for sending data via USB, GSM cellular modem, LAN or T&D's handheld data collectors.

Alarm & Remote Data Transmission

Longhini occasionally views the data from his home PC, but as long as the system is on over watch, his product is continually monitored. His preset temperature ranges for this application are 26°F at the low end with a high limit of 35°F, and he adjusted the temperature parameters in the trucks to compensate for defrost cycles. The system's alarm sampling checks are performed at the same rate as the temperature sampling.

Whenever a reading shows that the sausage product has suddenly gone out of temperature, the base station sends an email alarm via the network directly to Longhini's email address. He comments on the critical importance of this feature: "99% of the time when you get a temperature alarm for food in storage, it's telling you that you have a real problem and you need to hurry. There aren't many false alarms so this usually means the truck refrigeration unit just failed and your safety window is shrinking. You just can't afford to miss an alarm in this business."

Now when a temperature violation occurs overnight, Rich will immediately get an alarm notification sent to his mobile device. He gives an example of how an alarm event would arise: "It'd be on a weeknight—I'd first notice it as an email from my phone. From home I'd log in to the T&D Current Readings Monitor, look at the alarms and then decide what action to take. That could mean emptying the affected truck or moving product from one unit to another…whatever it takes to get it back in temperature spec ASAP."

Proving Product Quality to Customers

Another business priority for Longhini is archiving the temperature data as proof of product quality. In addition to performing configuration and setup, the included T&D software enables him to create charts and graphs showing the temperature history: "It's a convenient backup that I can use as proof to my customers that my shipments stayed in temperature for the entire length of storage."

The temperature data can also be sent to the free T&D Cloud where it can be viewed and shared 24/7 via web browser.

Business Benefits

The T&D RTR-500 Wireless Data Logging System has completely automated the Longhini Sausage cold chain monitoring setup. After the quick installation and setup, Rich is now assured that his trucks are ready to deliver quality product the next morning. Before installation the system Rich would worry, lose sleep and occasionally drive back out to make sure everything was okay.

It is no surprise, when asked to name the biggest benefit of his new system, Rich replied, “Just knowing that my product is safe unless the system tells me different provides peace of mind. Getting an alarm directly on my phone is also nice. I would recommend T&D--it works, it’s cost-effective and you guys at CAS Data Loggers will take good care of me with technical support.”