APPLICATION NOTE

CAS DATALOGGERS

Shipment Temperature Monitoring for Milk Crate Transport

Low-Cost Transit Loggers Meet Food Safety Transportation Standards

A milk supply company was looking for a temperature monitoring solution to track shipments from the bottling plant to stores. During deliveries to distant receivers, including farmers' markets and supermarket chains, the milk's temperature needs to remain below 2-3°C (36-37°F) throughout transit. Naturally, milk is an extremely temperature-sensitive product, which begins to spoil if its temperature rises by more than a few degrees above this range, curdling in the container. If the temperature goes outside of the required range, the milk can be rejected by receivers as unsafe for sale due to health risk and must be discarded.

Since it could take several days for the fresh milk to reach store shelves, it was very important that the temperature history from the trip be quickly validated. And, the company's products are often shipped to locations where proprietary software to review the temperature history was unavailable. With these issues in mind, the company wanted to find an accurate temperature measuring solution that would continually monitor their product in transit and provide immediate onsite proof of quality to receivers without the need for special software.

Installation

The milk company selected Halveon T-Stream Multi-Use data loggers for their refrigerated

shipments to closely monitor milk temperature during transport. Drivers place the loggers into self-adhesive pouches and place them directly onto the crates, four per truck. During deliveries, the internal sensor in each unit accurately monitors the milk with a typical accuracy of 0.5°C and a resolution of 0.1°C. Their lightweight and compact design makes for an easy fit among the crates. The loggers come with a 6 point certificate of validation ensuring accurate measurements. They are powered by an internal battery with a life of up to 2 years and the loggers are IP67 rated for compatibility with the damp environment in the shipping compartment. Installed this way, the data loggers provide good coverage of the shipment and continually monitor the product throughout transit to the stores.

Usage

The data loggers start up with the push of a button and also have a view/mark button which can be used to bookmark readings at key points but continue to monitor until reaching the end of their journey. They also offer advanced alarm capabilities to immediately indicate on the display if the temperature has remained with the limits during the trip or if the product temperature got out of range. Drivers simply check the loggers during routine stops and look at the display to make sure everything is OK or if the limits have been exceeded. Users can also view the minimum, maximum and average temperature during the recording period using the buttons on the logger. The measurement interval (from 1 minute to 24 hours) and high and low limits can easily be configured using the T-Stream MU software on a PC during setup. When the crates of milk arrive at the receivers, each data logger can be plugged into a USB port on a PC allowing a pdf report to be printed directly or the raw data can be transferred as a .CSV file.

Benefits

The milk company saves both time and product by using the portable T-Stream data

loggers in the back of their milk trucks to provide effective and reliable monitoring for their temperature-sensitive product during transport. The compact data loggers come with free setup software and the built-in ability to generate reports for the receivers proving that the milk's temperature has been successfully maintained throughout the trip. With this simple solution it's much less common for receiver to get spoiled product and have to reject or discard it.

The ability of the T-Stream loggers to provide an immediate printed .pdf report when the shipment is delivered simplifies the process of providing both the shipper and the receiver with the required documentation of the safe transport of the milk. This allows the producer to comply with FDA regulations and satisfy the customer that they are getting a safe product. Looking to the future, the customer is investigating the potential of the Halveon T-Stream RM loggers to provide full time visibility via continuous live data updates during shipment using its cellular connection along with real-time SMS and email alerts for immediate notification of problems.

For more information on the Halveon T-Stream loggers, or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.