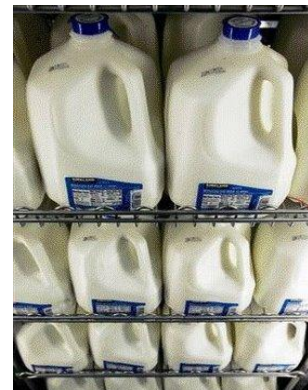


Monitoring Milk Shipments En Route to Supermarkets

Escort iMiniPlus PDF Cold Chain Temperature Data Logger

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CAS DataLoggers recently provided the temperature monitoring solution for one of the largest milk companies in the US. During deliveries to distant receivers including widespread supermarket chains, the milk's temperature needed to remain at a constant 2°C-3°C (36°F-37°F) throughout transit, otherwise the milk would be rejected by receivers as unsafe for sale due to health risks. An extremely temperature-sensitive product, the milk would spoil if its temperature was allowed to change too much—harmful bacteria began to form whenever the milk underwent a slight heat increase and then a rapid decrease, eventually spoiling and curdling at the bottom of the jug. Once this occurred, the milk would need to be discarded as a loss to the company. Milk transports were often sent out to remote destinations where proprietary software and interfaces were unavailable, and on average it would take up to 3-5 days for fresh milk to reach store shelves. Therefore the company needed an accurate temperature monitoring solution equipped with customizable alarms that would not only guarantee their product's integrity but also provide onsite proof of best practices to their many receivers upon delivery.



The milk company installed **3 Escort iMiniPlus PDF Cold Chain Temperature Data Loggers**, available in both internal and external sensor versions, in the back of their trucks to closely monitor milk temperature during shipments. The company requested and received a custom variation of the data loggers using external sensors with a modified sensor link so that they could fit tightly between cases of milk jugs during transit. The iMiniPlus units accurately monitored the milk across a temperature measurement range of -40°C to +70°C (-40°F to 158°F), and their large LCD displays with multi-function viewing enabled drivers to easily check the milk's current temperature, average readings, and time spent out of specification. Additionally, the dataloggers easily withstood being jostled between the gallon containers with their sturdy IP65 ratings.

Featuring improved accuracy, powerful 0.1°C (0.1 °F) resolution and a memory capacity storing up to 8048 readings, the iMiniPlus loggers also offered advanced multiple alarm settings to warn drivers if the milk temperature was becoming too high and also offered bookmarking and continuous logging features. Sampling frequency was user-definable anywhere from every 5 seconds to every 18 hours. Their lightweight and compact design made for an easy fit among all the gallon containers with their small size of 83 x 57 x 17mm and 70-gram weight, each powered by a user-replaceable 3V lithium coin cell with a long battery life of 1-2 years.

Equally importantly to management, the Escort iMiniPlus dataloggers automatically generated comprehensive PDF reports for download to PC via the included USB to USB cables without any need for

proprietary software or interface on receipt by the receiver. These PDF reports could quickly be customized to display graphs, lists of readings and summaries of any alarm limits violations and showed the date, time and temperature of all readings. Report generation also included a summary of transport condition, any time spent out of specification and trip statistics. Security was available through a password-protected encrypted binary file generated along with the PDF. Personnel validated the PDF reports by emailing them along with their binary files to management, thus meeting FDA requirements such as Title 21 CFR Part 11, mandating the keeping of electronic records and signatures.

Free Escort Console software was also included for downloading and programming the temperature loggers. The software provided an intuitive interface with process-oriented download and programming menus to allow beginners to follow a step by step format while more experienced users could go straight to the tabs they required and finish the process quickly. Tip features gave information on special features and how to make optimum use of the software, while extensive help files could be printed out and used as a manual.

The milk company saw immediate benefits from installing the iMiniPlus loggers in the back of their milk trucks, most important of which was the effective and reliable monitoring for their temperature-sensitive product. The compact data loggers also proved to be cost-effective compared to other monitoring devices on the market, and the real appeal of the PDF loggers to the company was that they needed onsite proof for the receivers that the milk's temperature had been successfully maintained throughout the journey, and the dataloggers' PDF function gave them that proof.

For further information on the Escort iMiniPlus PDF temperature data loggers, other Escort cold chain solutions, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Applications Analyst at (800) 956-4437 or visit the website at www.DataLoggerInc.com.

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