Custom Data Logging Protects Milk Production Process

Milk Tanker Sanitation Made Easy to Ensure Food Quality

Data retention and accountability are critical for many of the industries we service. This is especially true for food grade applications, such as the milk production process. Tanker trucks haul milk from the farm to processing plants on a daily basis. These tankers need to be cleaned and sterilized between deliveries to ensure food safety and quality. As part of the process, a permanent record showing the key information has to be generated.

Sterilization Data Solution

We recently completed a custom data logging system to help ensure that milk tankers reach the proper sterilization temperature for each wash and to provide documentation of the process. Reading and recording temperature data is rather straight forward, it was the accountability side of this project that made it unique.

To measure the temperature, we utilized a standard dataTaker DT82i data logger equipped with a K-type thermocouple probe. This logger features 2 universal analog input channels, allowing measurement of a wide range of sensors and signal types. The logger also features Ethernet and RS-232/RS-485 ports, allowing easy connection to other equipment. The logger was programmed using the dEX graphical software to sample the temperature every 10 seconds and keep a running track of the maximum temperature during each sterilization run. Internal memory for approximately 2 million data points allows it to store data from many days worth of operat-

-ion without the risk of losing old data.

Each tanker washed has a custom trailer number and custom seal numbers. As part of the documentation process, every time a tanker was processed, a hard copy record including these numbers, the permit number of the processing facility, and the peak temperature had to be produced. To facilitate this process, a touch screen HMI was programmed which allows the operator to input these custom values and start and stop the the data logging process (see figure 1).
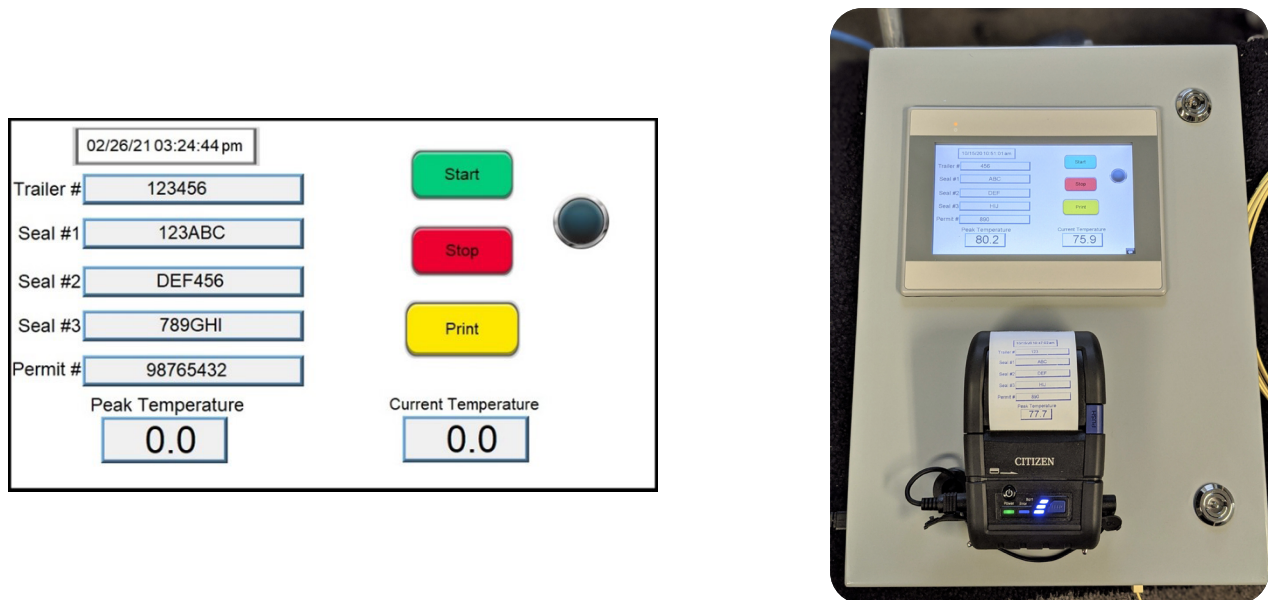

Figure 1. Example of the tanker documentation process on an HMI touch screen

Connection to the logger was made via Ethernet using the standard Modbus TCP protocol, which greatly simplified bi-directional exchange of data between the HMI and the logger. These values are recorded in the data logger along with the temperature data, and they can also be printed out on a receipt style printer at the end of cleaning process. Key information including the peak temperature, time, and data is also shown on the receipt. To facilitate long term permanent storage of the data, the

DT82i data logger was also programmed to automatically transmit the recorded data via email every day.

Benefits

The custom data logging system provided a complete solution to the problem of documenting the cleaning process. A durable temperature probe was quickly inserted into the tank being cleaned. Then, using the touch screen HMI, the operator could enter all of the trailer, seal, and permit info and start the recording process. The current and peak temperature was continuously updated while the process was running. At the end of the run when the cleaning was complete, a receipt style printout that captured all of the key information could be generated with a single button push. Going forward, there will be no doubt that the wash station has completed its job.

For more information on the dataTaker DT82i, 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.