

Milk Processing Balance Tanks

EJA565E

Accurate and Stable Level Measurements in Balance Tanks

Plant Name: Upper Midwest Dairy
Industry: Food and Beverage
Product(s): Milk and other dairy products

Application

When raw milk in a dairy facility is transferred from bulk receiving tanks to balance tanks, monitoring the product level in the tanks is critical to maintaining sanitary and cost-effective operations.

In addition to the raw milk, balance tanks must also accommodate surges of recycled milk that must be reprocessed because it has not met all the conditions for safe pasteurization.

Since balance tanks are relatively small, precise measurement and control are required to prevent overfilling and loss of product.

Hydrostatic pressure measurements are provided by pressure and level transmitters to help dairy facilities maintain the proper level of milk in balance tanks.



Figure 1. The facility's balance tank.

Challenges

Accurate and stable data on level and pressure contribute to efficient and sanitary operations. Difficulties in measurement and monitoring can arise. However, when the recycled milk from the pasteurization process is introduced to the balance tank the temperature difference between the raw milk and recycled milk can make level measurements difficult because the temperature changes too quickly for some measurement devices to compensate.

In addition, since balance tanks provide the initial head pressure for the pasteurization systems, improper conditions in a balance tank can negatively impact the process further downstream and lead to further upsets.

Solution

In order to respond quickly and effectively to potentially upsetting conditions in the balance tank, dairy facilities need precise and stable measurements of level and pressure. Food and beverage engineers rely on Yokogawa's 3-A-certified EJA565E hygienic and sanitary pressure transmitter.

Installation of the EJA565E transmitter is simplified by a comprehensive selection of sanitary process connections that are compatible with tanks from a broad range of manufacturers.

As dairy facilities mix raw and recycled milk streams in balance tanks, active temperature compensation in the EJA565E transmitter helps maintain accurate tank level measurements. The fast response times made possible by this compensation enable quicker adjustments to improve the level control and avoid overspill.



Figure 2. EJA565E

Key Advantages

- With 10:1 range turndown, the EJA565E transmitter enables dairies to reduce their inventory of transmitters and streamline their purchasing requirements.
- Active temperature compensation near the process diaphragm rather than in ambient air improves the accuracy and stability of level control and reduces the chance of tank overfills.
- A comprehensive selection of hygienic process connections enables its use and versatility in a variety of situations.
- With a 10:1 turndown ratio that accommodates many tank heights and installation environments.
- Allows dairies to maintain reduced inventories of transmitter models for both balance tanks and receiving tanks. Tracking fewer part numbers also eases the purchasing process.

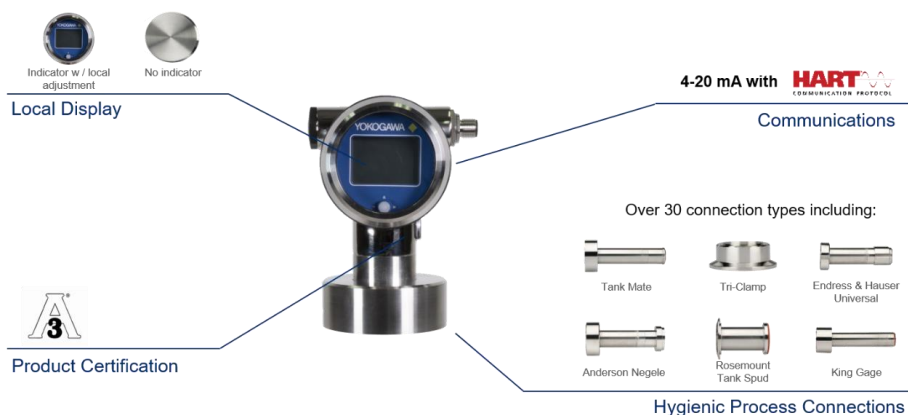


Figure 3. The EJA565E's features.

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