Coagulation sensor for curd-making vats

Tetra Pak® Services

Optimizes the cutting-time selection and reduces cost of failure

The coagulation sensor is part of the coagulation control technology that measures backlight scattering during milk coagulation, by means of optical fibres. This ingenious device will be fixed onto the wall of the vat, connected to the automation and calibrated one-time. It gives valuable insight into the coagulation process, provides early warnings of deviations, optimizes the cutting-time selection and significantly reduces the risk of failed batches. Results of the measurement can be made available in a plant information system (MIS). Moreover, if the sensor is used as an automatic start signal for the cutting, valuable operator time is freed for other tasks.

Benefits
- Optimizes cutting-time selection
- Reduces cost of failure
- Increases moisture and weight accuracy
- Frees operator time
Reliable, repeatable and accurate coagulation control technology

- Accurate replication of the cheese-maker’s selection of cutting-time. Takes processing effects like pH, milk age, cream content, changes in enzyme type, culture virulence and other parameters into consideration.
- Visualization of the coagulation process facilitates synchronizing the optimum and the requested cutting moment.
- Early warnings of deviations, in as little as 10 minutes, enables quick response, and adverse effects will be significantly reduced, e.g. disruption of production time schedule and loss of valuable production time.
- Gives insight into the ongoing process and can prevent failed batches due to no or insufficient rennet addition.
- The sensor measures the variation in product and production circumstances. Lower moisture variation and decreased weight variation combined with more consistency between the curd vats will give higher moisture and weight accuracy.
- Automatic verification of the coagulum frees valuable operator time for other tasks.

Design and installation details

- Vibration-insensitive, wall-mounted coagulation sensor with predicted cutting time algorithm and electrical connection to curd vat control system.
- Stainless steel enclosure, hygienic design with 3A approval.
- One-time calibration during installation.
- Graph of current batch (depending on HMI) with possibility to making results available in a plant information system.
- Tetra Pak delivers and installs the hardware. Normal installation time: four hours per vat.
- Available for semi-hard and cheddar cheese applications.

Optimizes the cutting-time selection

- Possible saving: 36,000 € per year
- Based on a full coagulation time of 30 minutes, 20 valuable minutes are saved.
  Line capacity 6,000 kg/h × 20 minutes × 6 events × 3 €/kg cheese

Tetra Pak® Services

Tetra Pak® Services covers every aspect of your food production, from maintenance routines to business insights. Our tailored service solutions improve performance, optimise costs and ensure food safety throughout the lifecycle of your operation. With Tetra Pak as your partner, you get the people, portfolio and presence to achieve your performance goals.

Find out more about Tetra Pak® Services at tetrapak.com/services.

Reduces cost of failure

- Possible saving: 27,000 € per year
- No or insufficient coagulation in six batches per year on average. Loss of quality downgrades the product.
- Not only is the failed batch affected, the previous batch is also degraded.
  Based on: 22,500 L curd vats, semi-hard installation and price of downgraded product. 2,250 kg cheese × 6 events × 1 €/kg × 2 batches