



APPLICATION REPORT Food & Beverage

Equipping a cheese dairy with flow, level and analysis instruments

- Automation of a production site for premium cheese
- Providing information on various plant operations – from raw milk reception to cheese preparation to sterilisation and wastewater management
- Cross-company and cross-country project management to fulfil customer requirements on time



1. Background

Royal-Aware, a family-owned Dutch business, specialises in the maturation, cutting, wrapping, storage, transportation, and sale of cheese and other food products. With the ambition to become the best value supply chain partner in the food and agricultural business in Europe, the company also started their own cheese production in 2015. Their state-of-the-art cheese factory in Heerenveen, The Netherlands, allows Royal-Aware to develop up to 80 specific recipes and provide customers with tailor-made cheese products. The cheese dairy has a production capacity of up to 100,000 t/year.

2. Measurement requirements

The complete project management and engineering was done by Royal-Aware themselves, starting construction in 2013. Process technology and components were supplied by several suppliers according to the companies' specifications.

With regard to process measuring technology, only a partner with ample experience in cross-company and cross-country cooperation would have been able to meet the demands on time. Various measurement tasks in different plant areas had to be mastered:

- Fluid handling at raw milk reception and during cheese milk preparation
- Monitoring CIP processes
- Controlling wastewater discharge

Among others, it was specified that the process instrumentation be manufactured using EC 1935/2004 regulation-compliant material as well as industry-specific hygienic connections. For digital communication with the PLC, it was mandatory that most of the instrumentation have PROFIBUS® DP capability.



4. Customer benefits

The KROHNE devices ensure a high level of automation of the customer's most important processes – from raw milk reception to wastewater discharge. All specifications of the customer were considered and supplied as requested, helping Royal-Aware start production on time.

Royal-Aware benefits from the single source supplier KROHNE. Having only one contact person for on-site support and service, make it much easier for the customer to quickly resolve application related issues in the future.

Key to success was the well thought-out project concept and the close cooperation (across companies and countries) between KROHNE as the full service provider for measuring technology, Royal-Aware as the end customer as well as various contractors.

This complex project once again added to KROHNE's large application expertise and years of experience in the food and beverage industry.

5. Products used

OPTIFLUX 6300 C

- Electromagnetic flowmeter for the hygienic measurement of raw milk and other conductive dairy products as well as CIP agents
- DN2.5...150 / 1/10...6", EHEDG and 3A certified



OPTIMASS 2300 C

- Twin straight tube Coriolis mass flowmeter for high volume measurement of milk and other dairy products
- DN100 / 4", EHEDG and 3A certified



OPTIMASS 7300 C

- Single straight tube Coriolis mass flowmeter for milk separation and standardisation
- DN10...100 / 1/2...4", EHEDG and 3A certified



OPTISENS COND 1200 and MAC 100

- Conductive conductivity sensor for monitoring condensate reflux to increase flash pasteuriser safety
- G1/2, G3/4, G1, NPT 3/4 (male); 0...20000µS/cm



OPTIFLEX 2200 C/F

- Guided radar (TDR) level transmitter for stock management of CIP agents
- 0.6...40 m / 2...131ft, independent from physical property variations



SMARTPAT pH 8150

- pH sensor for measurement of dairy wastewater
- PG13.5; with integrated transmitter



OPTIFLUX 2100 W

- Electromagnetic flowmeter for dairy wastewater applications
- DN25...1200 / 1...48", with rugged and chemically resistant liner



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