



APPLICATION NOTE Food & Beverage

Equipping a soft drink factory with measuring instrumentation

- Flow and level measurement
- Safety control for dry-run prevention of pumps
- One single contact person from the project planning phase until start-up

1. Background

A French mineral well operator has opened a new production plant for lemonades and soft drinks. In addition to its own spring water, the company uses mainly syrup and CO₂ in production.

2. Measurement requirements

Measuring technology continuously monitors all parameters including flow and level, pressure and conductivity to ensure a smooth process flow and a high-quality end product.

It is mandatory for the devices used to meet the high requirements of the food and beverage industry. The measuring devices must feature suitable hygienic connections, be manufactured using food grade materials and be suitable for use in CIP cleaning.



OPTIFLUX 6300 electromagnetic flowmeter

3. KROHNE solution

KROHNE supplied all of the measuring instrumentation for this project. This includes, among other things:

- OPTISWITCH 6500 level switches used for level detection in the processing tanks and as dry-run protection for the pumps.
- OPTIFLUX 6300 electromagnetic flowmeters for liquid transport.
- OPTIMASS 7300 Coriolis mass flowmeters with titanium straight tubes for highly precise density and flow measurement of the syrup as well as for dosing and transporting products to the processing facilities.
- OPTISWIRL 4070 vortex flowmeters for carbonation, i.e. the injection of CO₂ during soft drink production.

KROHNE also supplied other devices such as conductivity sensors (for the CIP cleaning systems) and pressure transmitters (to measure the level in the processing tanks), all from the one source.



OPTISWITCH 6500 level switch

4. Customer benefits

As a result of all the devices coming from the one source, the customer benefits from maximum transparency in terms of both production and product quality. During the course of the project, KROHNE consulted extensively with the customer regarding the selection and design of the measuring technology. This included in particular: the technology used, the right sizing of the measuring devices, recommendations for installation, start-up and staff training. This way, the customer had the benefit of just one contact person from the project planning phase all the way through to start-up.

5. Products used

OPTISWITCH 6500

- Capacitance level switch for hygienic applications
- Ideal for point level detection and dry-run protection in the food and beverage industry
- Insensitive to scaling or foam
- No maintenance required



OPTIFLUX 6300

- Electromagnetic flowmeter for the food and beverage industry
- For demanding mixing, dosing and filling applications with liquids
- DN 2.5...150 / 1/10...6"; process temperature up to +140°C / +284°F (suitable for SIP/CIP)



OPTIMASS 7300

- Coriolis mass flowmeter for extremely demanding food applications
- Single straight tube design without flow splitter for minimal pressure loss
- DN10...100 / 1/2...4"; flow rates up to 560,000 kg/h / 20,567 lb/min
- Best in class for accuracy and zero stability



OPTISWIRL 4070

- Vortex flowmeter for liquids, gases and steam
- Integrated pressure and temperature compensation for auxiliary and supply circuits with changing process conditions
- Gross and net heat capacity calculation for hot water and steam
- Standardised measurement under real conditions



Contact

Would you like more information about this application or others?

Do you require technical advice for your application?

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Please visit our website for a current list of all KROHNE contacts and addresses.

