Anderson-Negele NSL-M Level Control Solutions in a Carbonation Skid

“In this case study, we explore how Anderson-Negele's NSL-M level control sensor provided the ideal solution for the CIP cleaning process in a soft drinks system within a beverage plant environment.” – ITS

🔎 **Case Study:** S.I.P.A., an Italian systems manufacturer, is internationally recognised for its high-quality and reliable beverage plant solutions. When designing a soft drink system for a customer in Scandinavia, S.I.P.A. faced challenges with traditional float sensors due to concerns over cleanability and hygiene.

Advantages in the application ✓

The customer benefits:

- Hygienic, easy to clean level measurement
- Reliable function and high measuring accuracy even under extreme positive pressure and vacuum
- Precise level measurement even during the CIP process, unaffected by spray water and boiling water
- Foam insensitive measurement

Application Detail

Degassing

The entire soft drink system consists of several components that create great challenges for the measurement and control technology. In the first part, the degassing tank, oxygen is removed from the water to prevent taste deviations due to oxidation. For this purpose, a vacuum is created in the tank and the gas is extracted. For reliable processes, maximum efficiency and consistent quality, highly precise volume measurement, even under vacuum, is essential here.

Carbonation

After the mixing process of water and syrup according to different recipes, in the next step, the liquid is enriched with CO2. This carbonation takes place under high pressure up to the specified value. The end product is stored in a stacking tank while maintaining the pressure until filling. Here, too, the precise and above all fast (**less than 100 ms**) measurement of the level is decisive for controlling the process and maintaining a constant level.

The Anderson-Negele solution: The hygienic level sensor for extreme process conditions NSL

In the production process itself and in the CIP cleaning processes, the measuring instruments are exposed to extreme conditions. In particular, these are:

- High negative pressure (vacuum) during degassing
- High positive pressure (up to 95 PSI / 6.6 bar) during carbonation
- Strong foaming of the media (sparkling soft drinks)
- Fast temperature changes between process, CIP cleaning and rinsing
- Direct spray water on the probe during CIP cleaning, yet full function and measuring accuracy
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The results?

S.I.P.A. upgraded from float sensors to the **NSL-M**, which excels in these demanding environments, ensuring smooth operations, maximum product quality, and process reliability. With the **NSL-M**, *S.I.P.A.* has a solution which, thanks to a highly developed potentiometric measuring system, this product has proven itself with its high precision even under these rough conditions.

Michele Ravazzoni, S.I.P.A. Continuing Processing

"We were looking for a new, hygienic solution that would work in all processes, and especially also in the CIP process because of the horizontal tank position. Thanks to the competent advice from Smeri and a product test with Anderson-Negele NSL, we were able to more than meet all expectations. The system works perfectly and smoothly for the end customer. We are fully satisfied with the advice and the product."

Products Used:

NSL-M-00 Continuous level sensor

Level Sensors

NSL-F, NSL-FR Continuous level sensor

Level Sensors IO-Link