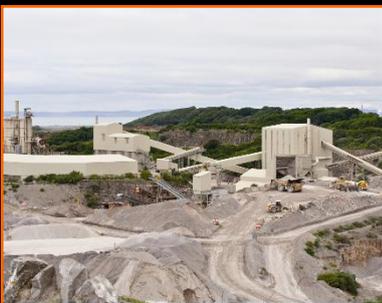


HYCONTROL

LEVEL MEASUREMENT SOLUTIONS



Food Manufacturing Foam Control Application



Pinguin Foods place continued confidence in specialist foam measurement technology

Foam control experts **Hycontrol** have supplied additional foam measurement sensors and a multi-channel control panel for **Pinguin Foods** at their Kings Lynn plant as part of a major £13 million expansion by the Belgian-owned fresh-frozen produce company.

The specialist Hycontrol equipment is playing a vital role in the new anti-foam dosing systems that have been designed by anti-foam specialists **CCL Pentasol**. CCL Pentasol have a long-standing relationship with Pinguin and their existing systems, based around Hycontrol Suresense sensors, have been continuing to provide effective foam control for the past four years.



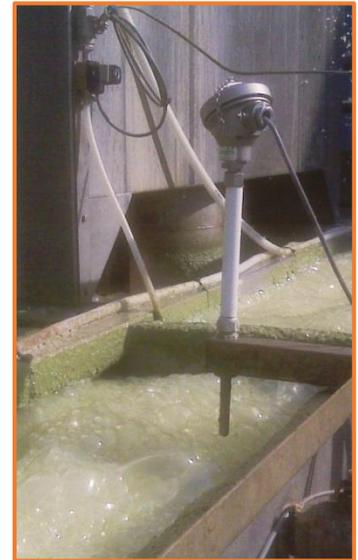
As part of the plant upgrade, Pinguin wanted to extend the overall foam control system to include two additional tanks used for washing beans and carrots. These tanks are external to the main factory and at some considerable distance from the existing 10 channel control panel. This was already fully utilised and as a result a new four channel control panel was needed, providing spare capacity for future expansion. The Hycontrol sensors are located directly in the flumes.

The preparation process at Kings Lynn prior to freezing involves the washing of a wide range of vegetables including carrots, green beans, brassicas and peas. The washing takes place in stainless steel flumes, which generates different types and volumes of unpredictable foam depending on the product and other operational parameters. Without any controls in place, over-foaming in such applications can soon cause severe process overflows, resulting in expensive loss of product and time consuming clean-up operations. The accepted solution is to add anti-foaming agents, but it is important to have an effective way of adding the anti-foamers in a controlled way. Initially the anti-foam agent at Kings Lynn had been dispensed with a simple timer-based system. Not only was this very wasteful especially when no foam was present, but it also could not identify and prevent potential over-foam events.



Effective foam control requires accurate data on foam behavioural parameters in real time. However, the effective and reliable measurement of foam thicknesses and foam-liquid interfaces presents a number of challenges. Traditional measurement techniques have been based on a range of existing level probe technologies 'adapted' for foam measurement. In most applications these tend to be inherently unreliable, inaccurate and adversely affected by process product build-up on the measuring probes.

By comparison, Hycontrol's patented foam measurement technique originated from detailed research into foam control during pharmaceutical fermentation. Unlike competitive systems, it uses level measuring technology specifically developed for measuring foam levels and foam-liquid interfaces, not modified standard level sensors. It has a proven track record in a wide range of applications and industries. Build-up of material on the sensor probes does not adversely affect the measuring results.



The anti-foam dosing system was designed and supplied by CCL Pentasol who specified the requirements on behalf of Pinguin. The SureSense foam sensors and stainless steel control panel were installed by CCL engineers, with Hycontrol providing calibration and commissioning support.

The overall system comprises an air-driven diaphragm pump which pressurises a flexible pipe running through the factory. Branches from the line supply each dosing point via solenoid valves. The controllers for the valves are installed in a purpose designed stainless panel, using data from the Hycontrol sensors located in the flumes.

Pinguin's Project Engineer **Matthew Bell** is pleased with the latest installation and as he concludes: "Controlling foam is a major concern for us especially for products such as peas and carrots. The CCL system, incorporating the special Hycontrol sensors, provides highly efficient foam control under wide-ranging conditions and minimises our use of expensive anti-foaming agents."

Footnote: With a history going back 50 years, Pinguin is a pioneer and market leader in healthy fresh-frozen food products. The company is one of the two independent divisions within Greenyard Foods, a major European food group based in Belgium. Employing around 1600 personnel, the Pinguin team grows and processes more than 400,000 tonnes of freshly harvested vegetables and fruit products per annum at 11 production sites. The range of fresh frozen products, including vegetables, herbs, fruit and special culinary preparations, is supplied to major retailers and food service outlets.

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