SIEMENS

SITRANS LG

Reliable radar transmitter for level measurement in malt extract production

What did you have for breakfast today? A bowl of cereal? Some toast with jam? Maybe a pastry (or two)?

That sweet taste in your breakfast foods might just come from a Canadian manufacturer of malted barley, wheat, oats, and rice extracts.

Malt extract can be found in these and other products, including chocolate, biscuits, pet food, vinegar, chewing gum, ice cream, and yes, even in that bottle of beer.

How this sweet ingredient gets into your breakfast begins with the new SITRANS LG guided wave radar transmitter from Siemens.

A recipe for success

Take some barley, crush it, and then add some water to create a slurry called "mash." Add heat and let the wort collection process begin. Enzymes convert grain starches and proteins to digestible sweeteners and protein – the result is this fluid called "wort," which is separated from the slurry mixture.

Wort is tricky to measure, though, as you can see with a quick peek inside the wort tank (see above).

Foam – sometimes up to a meter in height – plus heat and steam combine to challenge any piece of instrumentation.

SITRANS LG's hygienic stainless steel enclosure stands up to this company's regular wash-down routines in the wort vessels.

SITRANS RD200's larger text display provides easy-to-read information for operators so they can monitor levels in the wort vessel from a distance.

Add to that a lack of headroom – sometimes only inches from the top of the tank to the wort foam – and you're going to need a level measurement device with a small blanking distance and high accuracy.

This blanking distance between a non-contacting instrument's antenna and the level of material means the instrument cannot measure a certain section of the vessel. This wasted space in the vessel can reduce the efficiency of the process and even lead to overfilling the vessel.

Plus, since this company is manufacturing a food product, operators need to perform a weekly high-pressure wash-down of the wort tank. This wash-down is combined with a chemical sanitation bath of chlorine and quaternary ammonium. Instrumentation must therefore be stainless steel and tough enough to endure this regular cleaning schedule.

Tried and tested

The company met the challenge of this demanding application with SITRANS LG240, the liquids level measurement model of Siemens' newest guided wave radar transmitter.

Operators installed the transmitter and its flexible, single cable probe in one of the vessel's existing openings using a sanitary tri-clamp fitting. SITRANS LG240's two-millimeter accuracy gives this company the precision it needs to produce the highest quality malt extract.

The transmitter is connected to a SITRANS RD200 remote display at an operator's station for convenient remote monitoring. This display's 35-millimeter (1.2 inch) text gives operators better visibility, as it can be read from distances of up to 10 meters (30 feet).

Time, temperature, and reliable equipment

The manager responsible for production at the company describes the wort collection process as "Mother Nature enhanced by time, temperature, and reliable stainless steel equipment."

For this manufacturer, the installation of the new guided wave radar transmitter gives operators reliable level measurements in the wort collection process. Despite foam, high temperatures, and regular cleaning requirements, SITRANS LG240 performs consistently and accurately.

Even the sticky residue caused by foam does not hinder the transmitter's performance, allowing operators to focus on producing the sweet malt extract for customers worldwide to enjoy.

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