

Special Demands in Bakery Applications



Bread baking involves high temperatures and humidities. To achieve optimum results, the baking process must be monitored and controlled carefully.

The measurement of humidity in many high-temperature baking and drying processes requires special instruments characterized not only by stability, reliability and accuracy, but also by ease of use and flexibility of configuration. The Vaisala DRYCAP® Dewpoint Transmitter DMT346 meets these requirements. When configured to customer specifications, it can be used safely in temperatures up to 350 °C.

In many high-temperature baking and drying processes, the achievement of the right conditions makes all the difference between prime and inferior quality foodstuffs.

Applications such as bread baking or cereal manufacturing, for example, must have a carefully controlled humidity level in the dryers and ovens in order to keep quality and yield high. To maintain humidity within acceptable limits, the moisture content of the process air must first be measured. A combination of high temperature, up to 350 °C (662 °F), and high humidity poses special challenges for measurement

equipment. Very few devices can survive these conditions.

Moisture Control Ensures High-quality Crackers

One example of a food production process where the right moisture level in the ambient air is essential is in cracker production. The crackers are dried in three different phases in which the temperature varies from 150 to 300 °C (302 ... 572 °F) and the humidity goes from high to low.

If the ambient air has too much moisture in it, the crackers retain a high level of free moisture and will not crackle, as they should.

The high water content also means the crackers spoil more easily, and the production yield stays low. On the other hand, if the air is too dry, the surface of the crackers can dry too quickly and trap the free moisture within – or the product can become too dry and brittle. Drying the product too much also wastes heating power. In both cases the color and flavor of the crackers suffer and the product yield is poor.

Similar effects take place in bread and biscuit baking and in cereal and snack manufacture. Even in processes like roasting, the ambient moisture level changes the end product.

The DMT346 Keeps Cool at 350 °C

The Vaisala DRYCAP® Dewpoint Transmitter DMT346 is specially designed for applications where both high temperatures and high humidities occur, and the cooling set is a standard feature. The sensor can be placed directly in high temperatures without sacrificing measurement accuracy or stability.

The DMT346 has a unique auto-calibration function that performs calibration and adjustment by itself while the measured process is running. All corrections, if any, are also run automatically, which allows your operations to run without disruptions.

Read more about the DMT346 on our web site www.vaisala.com/dmt346.

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