

Turkington USA, Clayton, NC, offers a new oven control philosophy, known as eBake that allows bakers to select basic oven controls when running long continuous runs, or if a bakery is producing many varieties, management controls assist with quick changeovers, according to Jerry Barnes, vice-president of engineering, Turkington USA.

"A lot of customers are asking us to help them understand more of the actual science behind baking. For us, that means monitoring more of the key parameters that measure what's going on within the oven and, to whatever extent that we can, provide some ability to control that," he said. "The new control system puts these parameters upfront so the customer can highlight process and quality issues in a real-time fashion rather than discover an issue at a slicer."

By adding greater control over the baking process, bakers can use

a zoned approach in Turkington's ovens, which promotes product flexibility, Mr. Barnes noted. Bakers can track products in the oven and anticipate when the next item will be coming through, allowing the oven to change settings across the entire zone to prepare for the next product, he said. This feature will benefit bakeries that produce many SKUs at large economies of scale.

#### EFFICIENCY AND FLEXIBILITY.

In a mature market such as North America, bakeries often consolidate production from two older ovens or even update a single oven with new larger systems, according to David Kuipers, vice-president, sales and marketing, Reading Bakery Systems, Robeson, PA. When doing this, care should be taken to maximize the line's ability to run a variety of products. "Even on systems that will be dedicated to a particular product such as sandwich cook-

ies, the manufacturer wants to know the full range of products it could produce in the future," he said. "To help meet those requirements, we enter into a dialogue with [our customers'] R&D and engineering teams about options available to make the oven more flexible. The discussion usually centers on the ability to change the radiant/convective mix to produce the widest range of products."

When suitable, Mr. Kuipers noted, many bakeries increase use of convection in the baking process to improve efficiency and reduce bake times.

Many bakers, he observed, are trying to understand and benchmark energy usage in their ovens to target improvements. To assist such efforts, Reading will install fuel flow meters to record fuel usage during a production shift to determine actual product cost per kilogram and identify opportunities for improvement in fuel usage, according to Mr. Kuipers.

## R&D Flies Free

For product developers and corporate engineers, traveling from plant to plant can get old quickly — especially if they're hauling essential equipment that needs to be shipped in advance or checked as baggage along the way. However, Reading Thermal, Sinking Spring, PA, rolled out a compact R&D oven profiling kit in a 24-in. carry-on case with retractable pull handle and wheels at interpack 2011, which was held in May in Düsseldorf, Germany.

The Scorpion 2 R&D Smart Sensor is the key component to the kit, according to Richard Starke, director/general manager,

Reading Thermal. Specifically, the multi-element sensor can measure temperature, airflow, heat flux and product core temperature. The kit also comes with

an optional humidity sensor to provide measurement of a fifth key baking parameter.

Baking and snack engineers and R&D personnel can get a complete set of oven profiles with two passes of the sensor through the oven, Mr. Starke noted. Typically, he added, collecting this data using individual sensors would require five passes through the oven.

"The R&D Profiling Kit targets the traveling R&D or corporate engineer who needs the ability to easily travel with equipment and quickly profile an oven," Mr. Starke said. "This person is interested in benchmarking an oven for R&D purposes, product development, product transfer and oven matching across the company's baking platforms. This person is not interested in studying side-to-side temperature or airflow variation, which would require individual, much larger temperature and air velocity sensor arrays matching the conveyor width. This type of detailed profiling is left to the plant personnel."

— Dan Malovany



▲ The new R&D profiling kit comes with portable multi-element sensor that can measure temperature, airflow, heat flux and product core temperature. An optional humidity sensor can measure a fifth key baking parameter.

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