sesotec

Food

Metal detection with AI ensures the perfect salami

Loidl
Produkt: INTUITY THiNK

The idyllic town of St. Stefan im Rosental, located in the Styria region of Austria, is home to Loidl Salami. Founded in the 1960s, H. Loidl Sausage Producers and Distributors GmbH & Co KG attributes their rapid growth to the high quality of their products. A superior eating experience is ensured by a combination of handiwork and technical controls behind the scenes.

The problem: Debris from aluminum clips in the salamis

After bowl chopping the meat and carefully mixing all ingredients, the salamis are filled into an air-permeable casing and closed on both sides with aluminum clips. The salamis are then hung in the ripening chamber where they will remain for as long as three months. Once ripe, some Loidl salami products are packaged in slices. This requires removing the casing and the aluminum clips by hand.

In some cases, residue from the aluminum clips remains on the salami. The standard metal detection solutions Loidl had used up until that point were not sensitive enough to reliably detect the metal contaminants. So Loidl turned to Sesotec in search of a solution for detecting and automatically rejecting metal contaminants from salami sticks with a length of 50 to 60 cm. The focus quickly turned to methods using artificial intelligence (AI). Sesotec had been actively researching these methods at the time of Loidl's inquiry. The two companies formed a partnership in the development of "THiNK," an AI software for metal detectors.

The solution: Combatting product effect by means of AI metal detectors

Meat products have an intrinsic conductivity (product effect) that makes it especially difficult for metal detectors to identify metallic contaminants. Equipping Sesotec INTUITY metal detectors with THiNK software presents a solution to this problem.

THiNK metal detectors use multiple, simultaneous frequencies to inspect the product. Using "intelligent" detection thresholds, the conductivity resulting from product effect can be isolated. All signals that fall outside of these thresholds will trigger the metal detector, considerably increasing the detection sensitivity.

THiNK represents a significant improvement in metal detector performance. Because the machine can be operated on a high sensitivity setting, it makes it possible to find even the smallest metal contaminants.
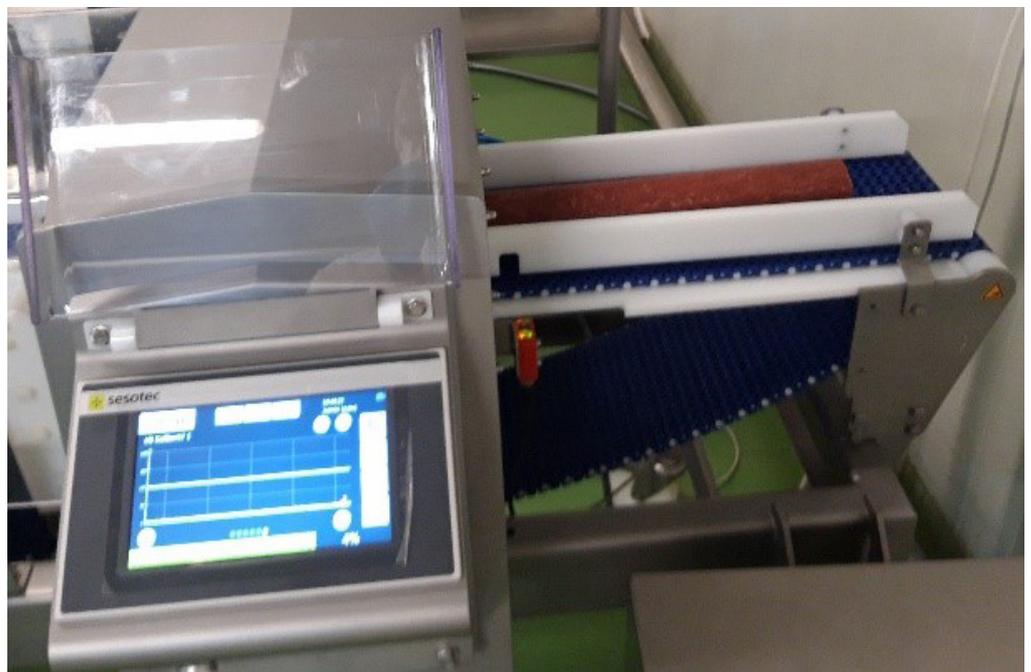
INTUITY metal detectors with THiNK artificial intelligence offer greater accuracy and reliability in the inspection of foods with high product effect.

THiNK is capable of virtually eliminating the interference caused by product effect. In other words, the metal detector can distinguish between conductivity caused by product effect and conductivity caused by metal contaminants. This helps to minimize false rejects and increase detection sensitivity.

In order to find the best setting for Loidl products, tests were carried out in the Sesotec technical center. Here it was determined that Loidl's detection needs could be met by a high-tech INTUITY metal detector equipped with THiNK software. The detector was calibrated for sensitivity to sizes 1.0-1.3 mm for Fe and non-Fe, and 1.3-1.8 mm for VA. Loidl received a UNICON metal detection system consisting of an INTUITY metal detector, a conveyor belt, a control unit with THiNK software, and a pusher rejection mechanism.

The customer benefit: Guaranteed product quality for the end consumer

INTUITY metal detectors equipped with THiNK offer a superior and efficient solution to the challenge presented by the high product effect of salamis. The required level of sensitivity to aluminum and iron is reliably achieved. The field test performed by Sesotec at Loidl's production facilities delivered valuable insights that made it possible to precisely configure the THiNK software so that INTUITY could perform as required.

Johannes Vogel, Head of Sales for Meat Products and Plant Management, expresses his enthusiasm for Sesotec's solution: "INTUITY with THiNK is a killer solution. Everything worked out perfectly and continues to run without issue. Our slicers are spared the damage from metal particles, and it's a great feeling to know we are using the newest and best technology available in order to guarantee the highest possible quality for our consumers. Sesotec took immediate action to address our concerns and deliver a solution for Loidl. We won't hesitate to reach out to them again the next time we have a metal detection project on our hands."

In order to detect debris from aluminum clips in unpackaged salami sticks, H. Loidl Sausage Producers and Distributors GmbH & Co uses INTUITY metal detectors with THiNK software from Sesotec.