

Is it actually fresh?!

AZ Surgelati S.p.a. has chosen Datalogic Automation vision sensors to verify the “best before” date presence on frozen pizza packages.



How many times during shopping have you wondered whether a product is actually fresh? Almost all the times! Everybody tends to choose products that look better, tastier and fresher. Once, customers were supported by the shopkeeper during the selection process, nowadays they can only rely on the information written on the products.

It is no accident that the food regulations force the producers to point out more and more information on the package such as ingredients, growing and production areas, production lot, best before date, etc... Most likely, nobody reads all the information printed on products but at least one data is always checked by everyone: the expiry date.

The best before date is a piece of information written on all the packaged perishable foods and it points out the date after which a product is not suitable for consumption any more. Producers are forced by the law to write this date on all the products they manufacture and sell.

Typically, ink-jet printers are used to write the best before date on the food items since they represent a mature and reliable technology. Nevertheless, ink-jet printing comes with some issues. For example, when a cartridge is going to run out, the writing can be totally missing or not readable due to the bad contrast. Also when the printing jets are occluded, some part of the writing could be printed not properly.

In order to avoid these kinds of problems, **AZ Surgelati S.p.A.**, Italian manufacturing leader of frozen pizzas for retailing, thanks to the partnership with **Keyfluid Srl**, has decided to implement a quality control based on Datalogic Automation DataVS1 vision sensor.

The device has been placed on the side of the conveyor that carries the packages to the wrapping machines. The vision sensor is triggered by a photocell that detects the package presence. DataVS1 acquires a picture for each package and performs an edge count control. When the characters are present inside the reading area, the algorithm finds several black-white transitions thus generating a good result. On the contrary, when the characters are missing or printed with a low contrast, the edge count tool detects a lower number of transitions thus resulting in a control fail.

The applicative main advantages of the DataVS1 usage can be summarized as follows:

Ease of installation: the vision sensor is configured through the hand-held configurator (VSC) very quickly. No additional software or external PCs are required.

Flexibility: the user can define the control area, the acceptance thresholds and the tool sensitivity parameters as well.

Versatility: on the production line, several different kinds of item are produced. Each of them has a different best before date position. DataVS1 allows to store up to 20 different recipes that can be selected by the operator through the VSC configurator. Thus there is no need to change the mechanical positioning of the sensor when the production changes.

Monitoring: the VSC configurator is used to visualize the images and the control results. The operator has the chance to check and verify the failure pictures and modify the inspection settings, if needed.

Reliability: the edge count tool is based on the detection of black-white transitions. This approach makes the algorithm very robust against ambient light variations.

DataVS1 allows to verify each single package and to find out printing failures in real time. All the wastes coming from a random or delayed verification are thus avoided. Once again, Datalogic Automation vision sensors prove themselves to be a cheap and simple solution for an effective quality inspection.

These objects are difficult to detect as they have very small dimensions and fall typically on unload channels that at times reach 2 m widths.

The use of an AS1 area sensor can avoid installing many different sensor along the entire unloading channel whilst reducing cost and installation time.

AS1 is a mini photoelectric light grid with crossed beams that detects flat objects reaching a 0.2 mm thickness and 75 mm width in a 100 x 3000 mm area. In this application, the required operating distance was 1900 mm and so the AS1-LD-HR-010-J model was used that guaranteed a 2100 mm distance.

Alignment ease and adjustment absence reduced drastically installation time. The sensor, positioned at the end unloading channel, allows the automatic machine to control the unloading and thus counting of the parts.

