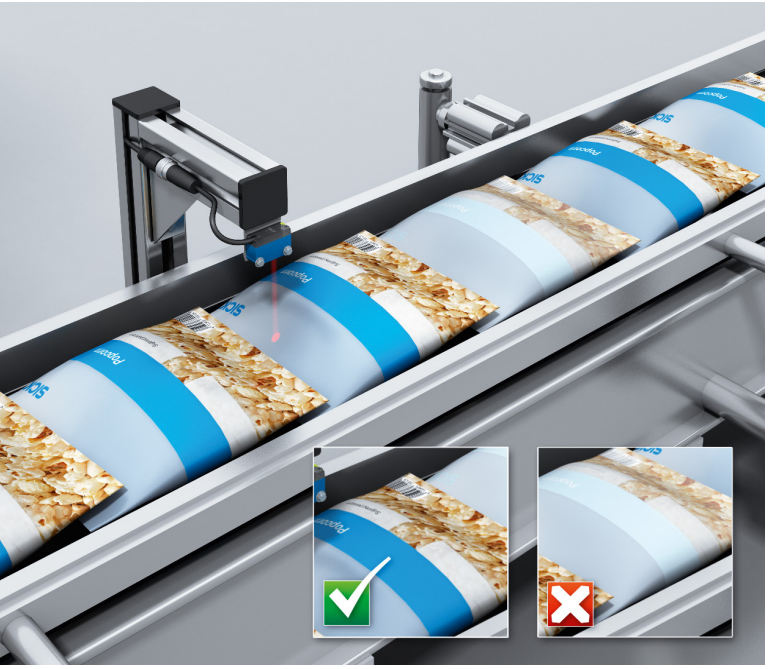
Labels and Patterns

A label differentiates a product from hundreds of similar products when a customer is making a buying decision. Labels and packaging must be unique to be noticed or remembered by customers. Labeling products is a fast-paced process that has little room for error. For example, the continuous labels for bottles must be cut in exactly the right place before they are applied to the bottles.

Traditionally, registration or contrast sensors were used to look for a large blocks of color on the labels to know where to cut. Labels had to be designed in low contrast so that the sensors could reliably detect the large blocks of color.

These contrast blocks or registration marks present design challenges on the labels and require more material to cover up the marks. Another problem that arises is when a registration mark is printed in a color that confuses the sensor, which leads to false trips and improperly cut labels.



Other challenges with patterns:

- Tracing patterns for processes such as gluing, which involves manual verification of the products position before the gluing process and the end glue pattern. This verification slows down the process.
- During the packaging process, problems arise as product has to be positioned perfectly for it to be packaged correctly. Special marks on the package for folding or packing, again take up important design space and are unattractive to customers.

Application Note

SICK
Sensor Intelligence.

Using Pattern Detection for Labels

Pattern sensors are an ideal solution. A pattern sensor is a proximity-scanning opto-electronic sensor. Distinctive, taught-in patterns in an image are used as a reference for the subsequent, accurate detection and positioning of objects. A switching signal is generated at high speeds with an intelligent algorithm for signal processing regardless of reference marks.

By using pattern detection, labels can be designed without the eye marks as the sensor is focused on the image and its patterns as a whole instead of looking for a singular block of color. Because there are no registration marks, labels can be made with less material, saving material costs. Lack of marks also opens up space and gives more creative design freedom.

The Picture Perfect Solution

When reading patterns, the PS30 sensor from SICK scans at up to 10 meters per second. It is based on the operating principle of a line camera. It delivers a stable switching signal, even without an eye mark at high speeds. Similar to a camera, the PS30 looks at the image on the label, not an eye mark. The PS30 differentiates itself from a camera by analyzing a single line of pixels, this way it can evaluate an image faster than a typical camera. The PS30 combines the image flexibility of a camera, with the speed and performance of a contrast sensor.

Contact your SICK Sales Representative to learn how pattern detection can enhance your manufacturing process.