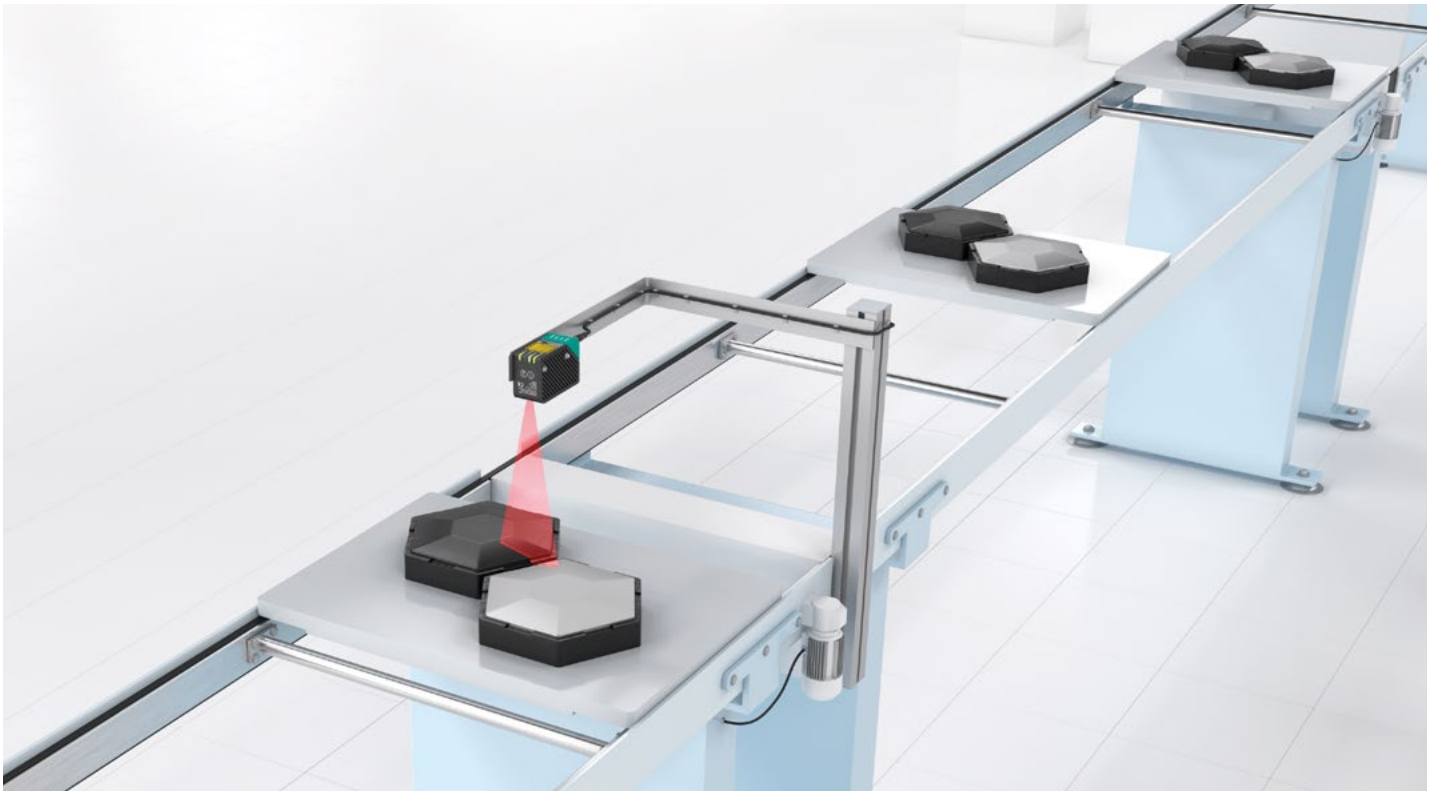


Uninterrupted Material Feed in Production Plants

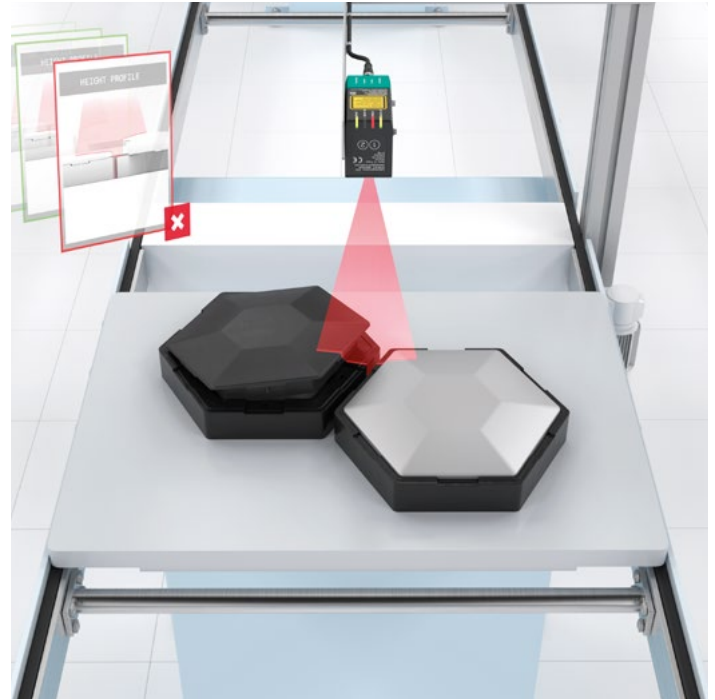
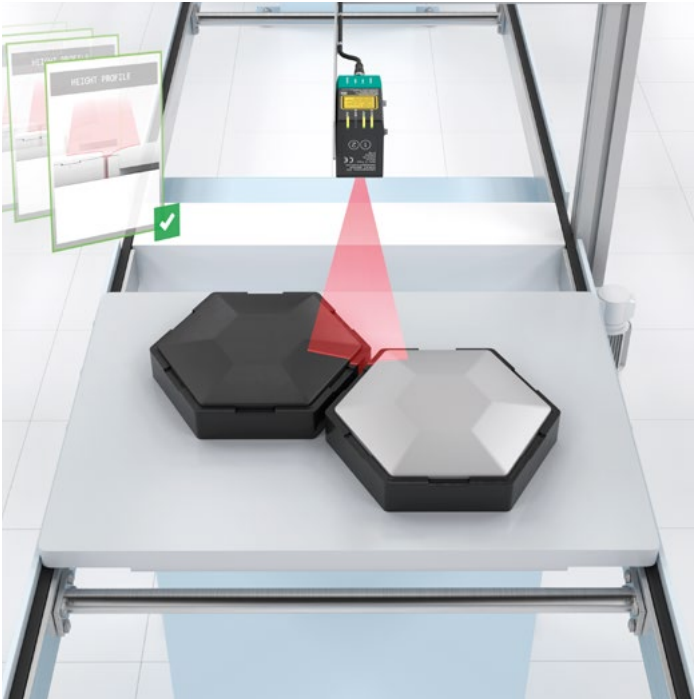
Light Section Sensor Checks Presence and Position Simultaneously



The Application

Robotic handling systems are often used to feed workpieces or raw materials into production and processing systems. Workpiece carriers are used to transport the materials to the plant, where the materials are then automatically removed. In conventional solutions, standard vision sensors are used to

control the position of the materials being fed. This process is costly and complex since these sensors quickly reach the limits of their detection performance when working with low-contrast objects. In such cases, standard vision sensors require additional external lighting and complex configuration.



The Goal

An uninterrupted supply of raw materials is crucial for maintaining cost-effective operations in production plants. The materials, which can vary in color, are transported to the machine in workpiece carriers. Before the materials are picked up by the robotic system, it is necessary to check whether the materials are present (presence check) and whether the materials are in the correct position (position control). Efficient operation without plant downtime or production waste is always the top priority.

The Solution

With the SmartRunner Matcher light section sensor from Pepperl+Fuchs, both detection tasks can be performed in a single step. The sensor is mounted above the conveyor system and checks two items simultaneously by detecting the height profiles. When these height profiles match the reference profile stored in the sensor, the switching output sends a “good” signal. Differing height profiles indicate either missing or incorrectly positioned raw material, and the sensor sends a “bad” signal.

The SmartRunner Matcher thus prevents waste and plant downtime, enabling more efficient production.

The Benefits

SmartRunner Matchers are optimized in the factory to compare height profiles, meaning they can be integrated directly into the application without any specialized expertise required. The solution is easy to configure, and there is no need to evaluate raw data. Instead, the detection result is delivered as a switching signal that can be understood by any control panel.

Light section technology delivers highly precise, reliable results, regardless of the surface quality, contrast, and color of the objects being detected. Unlike conventional vision-based solutions, expensive and difficult-to-install external lighting is not required. The wide detection range of 160 mm allows multiple objects to be detected and verified.

An extended version of the SmartRunner Matcher is also available, allowing up to 32 height profiles to be stored in the sensor for quick reparameterization after plant changeovers.

At a glance:

- A compact, preconfigured light section sensor for detecting height profiles
- Quick integration into any control system due to easy-to-process switching signals
- Highly reliable results, regardless of surface quality, colors, and contrast
- Inexpensive and easy to install without the need for additional external lighting
- Easy commissioning through parameterization via Data Matrix control codes and teach-in