

PACKAGING

EFFICIENT APPLICATION SOLUTIONS

SICK
Sensor Intelligence.

as promised

Smart Sensor Solutions – START BENEFITING FROM THE ADVANTAGES OF INTELLIGENT SENSORS TODAY

The implementation of sensors that are as simple to integrate as possible and diagnostic options for determining process data or reducing downtimes are key concerns in the packaging industry. A consistent communication concept right down to the lowest field level is crucial in exploiting the features and technologies of state-of-the-art sensors and actuators, and making machines and systems more productive as a result. Through IO-Link, leading automation manufacturers have managed to establish a standard that solves the problem of clearing those final tricky hurdles in the communication chain.

Benefits:

- Utilize remote automation functions to increase your productivity
- Minimize the time required for mounting, installation, and commissioning
- Optimize servicing and maintenance flexibility
- Reduce your costs across the board



→ www.sick.de/smart-sensors

FOUR DIMENSIONS OF SMART SENSOR TECHNOLOGY: SMART TASKS

In these times of “big data”, it is important not to lose sight of the big picture. For that reason, Smart Tasks processes the diverse sensor signals for detection and measurement, linking them to signals from an external sensor if necessary. Only the process information that is actually necessary is generated – in line with the task configured in the system. This saves time during data evaluation in the control, accelerates machine processes, and makes high-performance, cost-intensive additional hardware unnecessary.

At a glance

- Decentralized signal analysis directly at the sensor
- Faster signal capture and processing
- With Smart Tasks, the Smart Sensors provide the information that the system process actually requires – without separate data processing in the control unit

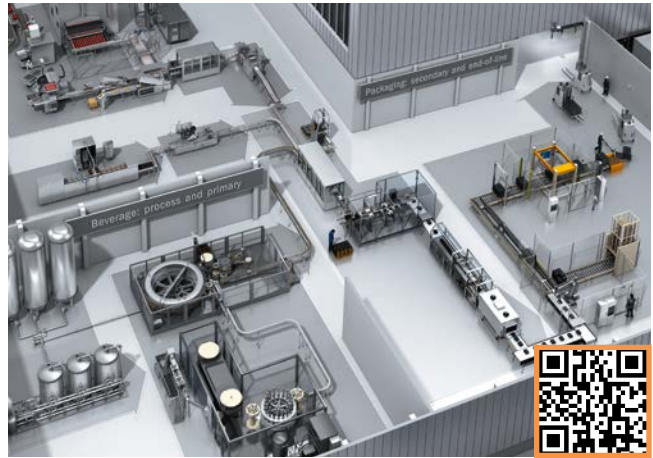
Smart Tasks enable data to be processed directly in the sensor. This leads to faster data transmission, leaner structures and cost benefits for your process.



CHALLENGES IN THE PACKAGING INDUSTRY

The packaging industry requires sensors and sensor systems that are tailored to complex, frequently changing tasks, while meeting the increasingly challenging standards for trademark protection, safety, and documentability.

From the rugged, moisture-proof photoelectric sensor, glass identification via intelligent image sensors, and checking the position of packaging elements through to protecting robotic loaders with safety laser scanners – SICK systems meet the requirements of the packaging industry.



Learn more about sensor solutions for the packaging industry
 → www.sick.com/packaging



Detecting and measuring

Differently sized products require flexible machines and a broad spectrum of intelligent sensors to detect objects and measure physical sizes. SICK's modern sensors feature automatic teach-in and diagnostic capabilities, and make a significant contribution towards meeting these challenges.



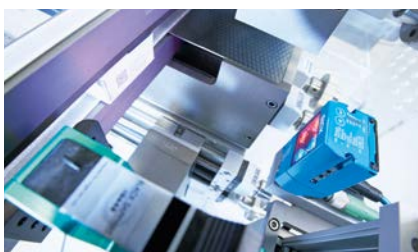
Protecting

The modular construction of modern packaging requires an intelligent and flexible safety concept. SICK safety solutions ensure the protection of personnel and machines, optimize production, reduce machine footprint requirements, and decrease downtime.



Monitoring and inspecting

In order to ensure constant high quality with high throughput speeds on packaging machines, a quality control system is needed that meets the highest requirements. SICK's distance sensors and vision sensors support nearly every type of monitoring.



Managing and identifying data

Reliable identification of objects is a prerequisite for a smooth packaging process which lays the foundations for traceability and continuous quality improvement. SICK offers a wide range of both permanently installed and mobile readers for bar codes, 2D codes and RFID technologies.

DETECTING AND MEASURING

Presence – Position – Speed – Contour

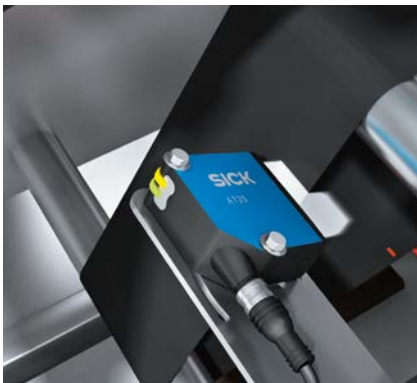


Reliable detection of packaging

Packages being transported on a conveyor belt must be detected and counted reliably. In the past, products had to be singulated for this purpose. The DeltaPac MultiTask photoelectric sensor (WTD20E) detects packages on the conveyor belt even if they are close to each other. It detects the packaging regardless of their color and surface. This allows for non-contact, wear-free, and reliable counting. With the DeltaPac MultiTask photoelectric sensor, therefore, this separation is no longer necessary. This does away with the need for elaborate mechanisms in the conveying line.



→ www.sick.com/DeltaPac



Accurate edge guiding

To achieve consistent packaging quality and sealing of flow packs, the packaging film must be run optimally through the bagging machines. The Ax20 array sensor precisely detects the edge of a wide range of films. The analog measurement signal reliably regulates sheet control through the machine. The visible light spot also enables accurate adjustment without additional settings.



→ www.sick.com/Ax20

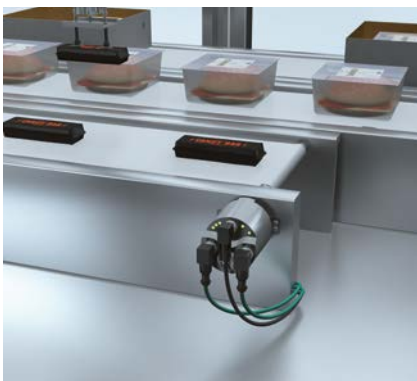


Flexible print mark detection for identification of the cutting position

Wrapping machines use rolled-up packaging materials, with the cutting position indicated by a print mark on the film. Detection of the print marks is necessary to prevent defective products and increase productivity. Even at very high speeds, KTS contrast sensors detect grayscale variations between the mark and the background on matte, shiny, or transparent surfaces.



→ www.sick.com/KTS_prime



Precise position value identification

The 3-axis gantry robot removes a carton from the conveyor belt and supplies it to the next process. Here, it is critical that the movements necessary for positioning within the process are carried out with a high degree of accuracy. The high-resolution AFS/AFM60 EtherCAT® absolute encoder takes high-precision measurements of the absolute position and speed of the conveyor belt.



→ www.sick.com/AFS_AFM60_EtherCAT

PROTECTING

Hazardous Point – Access – Safety Controller



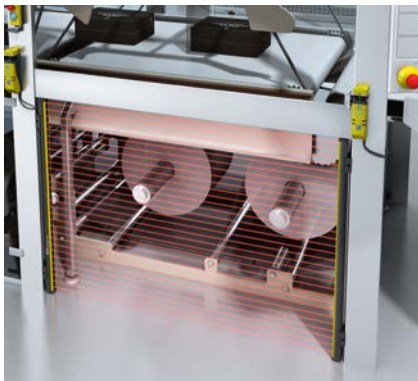
Intelligent and non-contact door protection

The STR1 non-contact safety switch protects safety doors on a packaging machine. The high tolerance of the sensor against door offset and the sensor's diagnostic capability increase machine availability. When used in combination with the Flexi Soft safety controller, safe series connection is possible. This enables the STR1 to issue a stop signal to the machine when a door is opened and to not allow the machine to restart until the door has been closed.



→ www.sick.com/Flexi_Soft

→ www.sick.com/STR1



Efficient hazardous point protection

The deTec4 Core safety light curtain protects the film area on an overwrapping machine while the machine is running. The reliable sensor takes up little installation space and does not have any blind zones. The integrated orientation display positions the sender and receiver quickly and reliably. When used in combination with the Flexi Soft safety controller, SICK here offers a complete machine safety solution.



→ www.sick.com/Flexi_Soft

→ www.sick.com/deTec



Safe speed monitoring

The palletizing robot represents a source of danger during setup or when pallet loading errors need to be rectified. The MOCO or MOC1 Motion Control module of the Flexi Soft safety controller monitors the "safe speed" of the palletizing robot and also provides other drive safety functions, such as "safe stop" and "safe operating stop".



→ www.sick.com/Flexi_Soft



Protection of the carton magazine

In the case of packaging machines, and particularly when it comes to material transportation of flat carton blanks, for example, there is a danger of the operator reaching into the magazine to add more material while the machine is running. With Safeguard Detector, SICK provides a certified, all-round functional safety system designed to avoid potential injuries.



→ www.sick.com/Safeguard_Detector

MONITORING AND INSPECTING

Quality – Process – System



Checking of seal

In order to close packages safely after filling, many manufacturers use a seal. The Glare sensor detects the presence of the seal due to the different levels of gloss. It distinguishes with maximum reliability between the reflection from the surface of the seal and the diffuse remissions from the packaging. Sensor settings, monitoring, diagnostics, and visualization are all achieved via IO-Link.



→ www.sick.com/Glare



Monitoring of filled trays

Ensuring that plastic trays are sealed correctly is crucial for the integrity of the packaging. The shelf life of perishable foods in particular directly depends on how the packaging is sealed. The TriSpector1000 3D vision accurately inspects the filled tray and reliably detects the volume of the tray filling, product residue on the edge of the tray, or an incorrect tray shape.



→ www.sick.com/TriSpector1000



Cutting of continuous labels without print marks

Continuous labels for bottles must be cut in exactly the right place before they are applied. The PS30 pattern sensor locates the cutting position precisely without print marks, even at high process speeds of up to 10 m/s. The sensor reads a pattern based only on the contrasts in the printed image and calculates the position sought from that pattern. This opens up a whole new world of design freedom for more attractive labels.



→ www.sick.com/PS30



The right product in the right packaging

Food safety is becoming more and more important. As part of this, it must be ensured that the right product ends up in the right packaging. The Inline Code Matcher quality control system takes care of this by comparing various 1D and 2D codes (code matching) on the packaging. The system offers intuitive operation via an HMI with touch display and can be easily retrofitted.



→ www.sick.com/Inline_Code_Matcher

IDENTIFYING

Code – Plain Text – Data Carriers

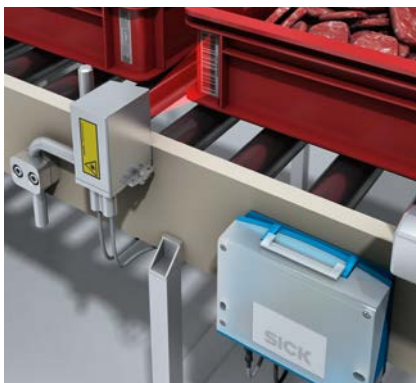


Check of best-before date

Once cleartext has been printed, a check must be performed to ensure that the best-before date has been printed correctly and legibly. The Lector620 OCR image-based code reader is the intelligent solution here. It checks the variable data and codes on the packaging systematically for quality and accuracy.



→ www.sick.com/Lector62x



Reading of bar codes on transport crates

In the meat-processing industry, 1D bar codes have to be read in difficult and harsh conditions. The CLV64x bar code scanner with rugged stainless-steel housing masters this demanding task and is suitable for continuous use. The stainless-steel housing is also able to withstand temperature fluctuations and intensive cleaning cycles.



→ www.sick.com/CLV64x



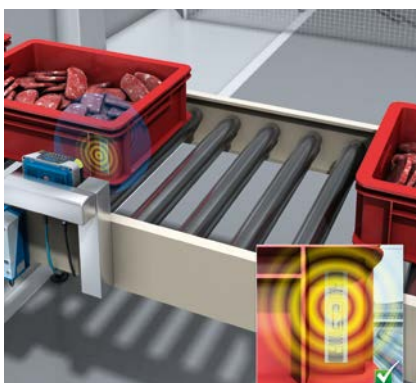
Identification of molds using the Asset Monitoring System

Identification and traceability play an important role in the food industry. Chocolate molds must be checked and, if necessary, replaced after a certain number of usage cycles. The Asset Monitoring System compares the 1D or 2D codes of the molds with the saved data and shows them on the HMI. The Asset Monitoring System offers intuitive operation via an HMI with touch display and can be easily retrofitted to existing machines.



→ www.sick.com/Lector63x

→ www.sick.com/Asset_Monitoring_System



Intelligent process control based on specific tag data

In the meat industry, RFID tags on the transport crates help to achieve intelligent process control. The tags contain all the necessary data. An RFU62x RFID writes the tags and reads out the data. Thanks to the fact that all established data interfaces and fieldbuses are supported, exchanging data with the control center is easy. In addition, the RFID offers a range of diagnostic functions.



→ www.sick.com/RFU62x

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,800 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is “Sensor Intelligence.”

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations → www.sick.com