# Smart packaging powered by SICK Sensor Solutions

Intelligent sensors open up new opportunities in packaging technology

Waldkirch, September 2018 – At the FachPack trade fair, taking place from September 25 to September 27 in Nuremberg, SICK (hall 4A, stand 525) is presenting intelligent sensors and sensor solutions for packaging technology. As well as providing process-based switching signals and measurement data, these sensors can deliver a wide range of additional information that makes packaging processes more transparent, dynamic, and flexible, while also automating quality assurance and minimizing downtime through diagnostics – helping to boost machine and system availability at all levels of the packaging process. With integrated intelligence, sensors from SICK can also perform an internal, decentral evaluation of the detection and measurement signals – translating data into information that can be used to independently execute specified automated Smart Tasks at field level. High-speed counting, time and length measurements, decentral signal debouncing, time stamp synchronization – all of these Smart Tasks help to remove the burden from central automation systems, reduce data communication in fieldbuses, and boost productivity in packaging processes. At the same time, intelligent sensors also allow information to be used at higher levels for purposes such as predictive maintenance, which in turn helps to optimize the availability of packaging machines.

Sensor intelligence at FachPack – Highlights at the SICK trade fair stand include the new photoelectric retro-reflective sensor from the W16 and W26 product families, a complete solution for end-to-end packaging inspection developed in conjunction with system partner AutoCoding Systems, the SafeGuard Box to protect box blank infeed points, the TWINOX4 safety light curtain in a stainless-steel housing for pharmaceutical packaging applications, and the Ranger3 3D vision sensor and OD1000 displacement sensor – designed for the reliable inspection of tablet and blister packaging.

**Detecting and measuring**

The packaging industry requires sensors and sensor systems that are easy to integrate, that can adapt quickly and reliably to ever-changing tasks, and that feature diagnostic capabilities to optimize the performance and availability of machines. The new W16 and W26 photoelectric retro-reflective sensor with IO-Link, which come in a rugged, laser-marked VISTAL® housing, meet all of these needs. The first two products from the new generation of opto-electronic sensors are packed with innovative features that make them ideal for use in packaging applications. These new features boost detection performance, guarantee maximum reliability, increase sensor availability and integration compatibility, as well as significantly improving the user experience. The brand-new BluePilot control concept enables the user to configure the sensor in a matter of seconds. TwinEye technology offers maximum operational safety in all situations that occur frequently in the packaging industry, including when working with shiny surfaces, reflection, strong contrasts and remission differences, and uneven surfaces. Thanks to the new OptoFilter, the W16 and W26 can also cope with the depolarization effects that can occur with loaded pallets which have been wrapped in film to secure the load. The ClearSens technology used in both product families maximizes detection reliability on transparent objects such as bottles, Petri dishes, blister packets, or deep-draw containers. The AutoAdapt technology compensates for layers forming on the surface due to dust, cardboard residues, or other deposits. Alongside the W16, the W26, and an extensive portfolio of photoelectric retro-reflective sensor, SICK’s sensors for edge guiding, detecting print marks and transparent tamper-evident pharmaceutical labels, and position detection in 3-axis gantry robots all highlight the company’s expertise in detecting and ranging solutions for the packaging industry.

**Protecting**

In any location where moving parts in packaging machines can be accessed externally – whether for process or service-related reasons – any persons present in the area must be protected against injury caused by hazardous machine movements. With more than 70 years of experience in safety technology, SICK uses its expertise to develop customer-specific, complete technical safety solutions. These solutions rely on technologies such as intelligent sensors and sensor solutions, including the SafeGuard Box and the TWINOX4 safety light curtain in a stainless-steel housing. The SafeGuard Box is a plug-and-play solution for packaging machines with box magazine material transportation systems. It prevents people being injured by reaching into the running machine via the empty material transportation. The TWINOX4 was developed especially for primary packaging systems and filling machines requiring sterile operating conditions in the pharmaceutical industry. Its stainless-steel housing is highly resistant to chemicals and mechanical force during cleaning, and has no edges or gaps in which dirt or bacteria could build up, which minimizes the risk of contamination. Other SICK safety solutions for the packaging industry include intelligent non-contact systems to secure machine doors, access monitoring in the film area of wrap-around machines, and safe drive and speed monitoring solutions for packaging machines and pallet robots.

**Monitoring and controlling**

To maintain consistently high product and process quality on packaging machines – even at high throughput speeds – automated quality controls of the highest standard are essential. These technologies need to be able to cope with a wide range of challenges: From detecting print marks and using design features to locate cutting positions on continuous label reels to checking that labels have been applied and are in the correct position with the correct content, checking the contents and completeness of primary, secondary, and end of line packaging, verifying the position, tightness, and effectiveness of seals, detecting transparent tamper-evident packaging seals, and much more. By bringing the new Ranger3 3D vision sensor to FachPack, SICK is presenting an inspection solution that boasts a CMOS sensor with ROCC (rapid on-chip calculation) technology, enabling it to produce completely accurate 3D measurements of objects of virtually any height – and to do so with an image refresh rate that can easily keep up with the ever-increasing speeds of packaging lines, both today and in the future. One potential application for the Ranger3 streaming camera is in the complete inspection of blister packets for tablets. The OD1000 displacement sensor from SICK is another high-resolution solution capable of measuring to micrometer accuracy to check the contents of packaging.

**Identifying**

Reliable object identification systems are essential to fast-flowing and fault-free packaging processes – and these systems become all the more important in the context of continuous quality improvements, seamless traceability, and documented product safety. Together with system partner AutoCoding Systems, SICK is using FachPack as an opportunity to present a complete solution for the food and packaging industry, designed to effectively complement inspection solutions and identification solutions. This is achieved through the horizontal and vertical integration of machines and sensors in four applications, referred to as the four I’s: initialization, inspection, identification, and information.

Ininitialization, the intelligent devices and sensors are automatically configured at the start of production, after a format change, or when updating a recipe. Identification ensures that the right materials are used for the product being manufactured – for example by scanning bar codes – and allows seamless traceability of the process. During inspection, the quality and robustness of the production process is measured, perhaps using vision sensors or other smart sensor technologies. Information refers to the process of using Industry 4.0 functions to glean useful information from sensors and to analyze and visualize the data produced to derive appropriate measures.

Mobile and stationary bar code scanners, vision cameras, and RFID systems from SICK record characteristics and data from products and packaging, check and interpret this data, and communicate it as information to the AutoCoding software platform and beyond, for the intelligent control, diagnosis, and documentation of packaging processes. Through its partnership with AutoCoding Systems, SICK is able to offer its customers integrated solutions that combine the outstanding performance of its own sensor products and solutions with the benefits and flexibility of the AutoCoding software platform.

# Image: SICK\_Fachpack\_KeyVisual Smart packaging powered by SICK Sensor Solutions: Intelligent sensors from SICK open up new opportunities in packaging technology

SICK is one of the world’s leading producers of sensors and sensor solutions for industrial applications. Founded in 1946 by Dr.-Ing. e. h. Erwin Sick, the company with headquarters in Waldkirch im Breisgau near Freiburg ranks among the technological market leaders. With more than 50 subsidiaries and equity investments as well as numerous representative office, SICK maintains a presence around the globe. In the fiscal year 2017, SICK had almost 9,000 employees worldwide and achieved group sales of around EUR 1.5 billion.

Additional information about SICK is available on the Internet at http://www.sick.com or by phone on +49 (0) 7681 202 4183.