

Providing clarity without a reflector: reliable detection of transparent packaging

Waldkirch/Düsseldorf, May 2014 - The new TranspaTect from SICK has no reflector but offers many advantages for the design and operation of packaging machines. The optoelectronic sensor provides consistent clarity when detecting, counting or positioning a wide variety of transparent objects and optically critical surfaces. The lack of a reflector simplifies machine design, cuts commissioning costs, and prevents problems involving replacement due to contamination. With its excellent detection reliability, the TranspaTect improves the availability of plants for packing food, beverages, medicines and other products in transparent packaging.

Availability despite contamination, no readjustment because of vibrations, and a stable switching threshold without any drift over time – the TranspaTect's uncomplicated performance in packaging plants is impressive. In terms of sensor type, the TranspaTect is a MultiTask photoelectric sensor with a PinPoint LED as its light source and a switching distance from 0 mm to 700 mm. Even surfaces with optical distortion or other distracting properties can be reliably detected. The optics, electronics and evaluation are accommodated in an industry-proven zinc die-cast housing.

Reflector eliminated as a cost factor and source of problems

The developers integrated a variety of new ASIC and evaluation technologies in the TranspaTect so that it can detect transparent objects (e.g. plastic storage trays, glass or PET bottles) without any reflector acting as a reference surface. A matt and stable machine background, e.g. a glass-bead-blasted stainless steel wall or panel, is all that is required for this purpose. The lack of a reflector gives machine constructors greater freedom in machine design. In constructive terms, neither an easily accessible mounting location must be provided for the reflector nor must any such reflector be purchased, mounted, cleaned or replaced. Installation and commissioning of the sensor itself is therefore considerably quicker and cheaper: the reference surface, on which sensitivity is taught-in via the teach-in button, is generally much larger than a reflector – so that accuracy is less critical for sensor alignment. End-customers profit from maximum operational and process reliability and availability because the reflector is eliminated as a potential source of problems.

AutoAdapt technology balances environmental effects

SICK's integrated AutoAdapt technology ensures that TranspaTect performance is not unduly affected even in dusty or damp environments. The sensor carries out continuous threshold adaptation to the new detection conditions caused by contamination (e.g. dust or product residues on the optics), ensuring reliable switching behavior. TranspaTect guarantees maximum detection and operational reliability as well as availability during packaging operation even if there is sudden contamination of the reference background.

High-performance packaging with TranspaTect

TranspaTect is mainly found in the packaging plants of the food & beverages industry and the pharmaceutical sector. Typical applications are the monitoring of transparent trays in the inflow tunnels of tray sealers, the detection of transparent food packaging (such as packaging trays for meat, cheese or fruit) on conveyor belts, or monitoring bottle flow at the entrance to fillers. Other applications involve the reliable detection of transparent packaging materials made of hard and soft plastics; PET preforms at the entrances or exits of plastic injection molding and stretch blow-molding machines; tube and hollow glass; as well as medicine bottles, ampules, vials and other pharmaceutical packaging.

In the world of clear materials one can always rely on clarity from TranspaTect.