Omron launches transparent-object detection sensor

Omron has announced the launch of the E3S-DB, a transparent-object sensor specifically designed for the food and beverage industry that offers better detection of objects such as glass bottles, PET bottles, transparent trays or packaging film.

The E3S-DB represents a new benchmark in industrial sensors for transparent object detection. A high sensing stability makes this new sensor ideal for detecting all kinds of transparent objects found in today's food and beverage packaging processes.

To enable high-precision detection and positioning on conveyors where the smallest of gaps between bottles exists, the E3S-DB is also available in narrow-beam models with convergent beams that have a focused spot size of just 2mm at a distance of 200mm.

Developed in close conjunction with customers who produce some of the world's leading branded food and beverage products, the E3S-DB features a unique optical system that enables sensing with low hysteresis and high dynamic range, which results in outstanding performance. For instance, the E3S-DB is capable of detecting just 3% light-intensity attenuation at a distance of up to four metres from an object.

The advanced optical system of the E3S-DB increases stability performance by completely cutting off even the smallest amounts of stray light that might interfere with glass bottle detection. Known as the bottle-lens effect, this unwanted magnification of light intensity commonly causes disruption of glass-bottle detection on packaging lines that use less-stable sensors.

Polarized-Opaquing

To meet the trend towards the use of thin PET bottles in the beverage industry, E3S-DB applies the technique known as Polarized-Opaquing, which offers increased detection stability through special polarising filters for PET objects. A further advanced feature automatically compensates for light-level changes caused by ambient conditions, or contamination.

Thanks to its newly developed 'Smart Teach' function, setting up the E3S-DB can be achieved both quickly and with minimum effort. Smart Teach simultaneously provides seamless setting of the light-intensity threshold and fast teaching all in one action.

To achieve the maximum operating stability, all an operator has to do is manually pre-select (using a trimmer switch) the ideal operational threshold level for the given sensing objects. Then, by simply pushing the 'teach' button, the sensor automatically adjusts light emission power and sensitivity according to sensing distance and selected threshold.

Information about the operational threshold of the sensor is always clearly visible and the operator can easily copy the setting from one sensor to another. This saves considerable time when setting up multiple sensors in the same production line, or in the case of maintenance.

User-friendliness

The E3S-DB's user-friendliness is further enhanced by a handy, time-saving PC monitoring tool. In conjunction with Smart Teach, for instance, this tool enables the optimum light-intensity threshold position to be easily and quickly determined by analysing the minimum attenuation of an object. The only action required of the user is to select this optimum threshold and apply it to his sensors at the push of a button.

In addition to the new E3S-DB sensor, Omron's broad range of transparent-object sensors for the food & beverage industry also includes:

- Compact sensors for confined spaces;
- Sensors with high-grade, stainless-steel housing for frequent wash down;
- M18 sensors for quick mounting;
- Sensors with co-axial optics for stable detection independent of sensor orientation;
- Sensors with flexible parameter setting by remote amplifiers; and
- Chemical-proof sensors for long life

For more, go to omron.com