

Continuous Material Feed Increases Productivity

Ultrasonic Sensors Measure Roll
Diameter and Detect Web Break

The Application

In automated packaging, materials are continuously fed from rolls and guided through numerous rollers to the appropriate position within the process. Depending on the product being packaged, materials can vary dramatically in their size, color, and surface texture. There are also many elements that can cause false trips, such as rollers, holding discs, and spool edges. To ensure efficient, reliable processes, sensors are required that can ignore unwanted reflections and detect any kind of material, even in space-restricted installations.





The Goal

In a facility that packages chocolates, for example, trays of the product move along conveyors. At various stages of the process, different materials are dispensed from rolls, including transparent film, black parchment, and glossy adhesive labels. On all of the rolls, the amount of remaining material has to be monitored continuously and any breaks have to be detected. This requires precise detection independent of color and surface.

The Solution

The ultra-compact UC-F77 ultrasonic sensor series is ideal for each task. Both the standard and side-looker models can be used to measure roll diameter. Depending on the size of the rolls, different sound beam widths may be required. The UC-F77 offers sound beam adjustability and the ability to blank out unwanted reflections. This allows the correct width to be selected for every roll and unwanted reflections from the rollers or other elements to be ignored. With the UC250-F77, for example, 5-cm-wide rolls can be measured without detecting the spool edge.

A narrow sound beam is also useful for detecting material breaks between the guide rollers. With the UC-F77, breaks can be detected even at close. Since material rolls are often positioned closely together, automatic multiplex mode is available to prevent cross-talk between the sensors.

The Benefits

Ultra-compact UC-F77 ultrasonic sensors are ideal for space-restricted applications and retrofitting existing machines. They deliver reliable measurement of roll diameter and detection of material break, regardless of the material size, color, or surface. Automatic synchronization prevents cross-talk and ensures reliable measurements. IO-Link simplifies parameterization and enhances sensor communication.

At a Glance

- Precise detection of even the most difficult materials, such as transparent film
- Adjustable sound beam width and the ability to ignore unwanted reflections
- High noise immunity and multiplex capability for maximum reliability
- Compact, space-saving housing design with standard and side-looker models
- Communication to the sensor level with IO-Link

For more information, please visit www.pepperl-fuchs.com/F77