Web Position Sensor Applications

Service Overview

> Web Position Sensor is an affordable vision sensor which can be used for edge, line, contrast sensing, marking detection among others.

Edge Detection Sensor

ARIS WPS for edge detection and edge guiding applications

One of the most common application for the Roll-2-Roll® Sensor is the edge detection application. The sensor can detect the edge position of a web or any object with 0.0635 mm resolution, irrespective of the material properties. Whether it is opaque, transparent, porous or nonwoven, the Roll-2-Roll® Sensor can measure the web edge position with ±0.127 mm (±0.005 in) repeatability without the need for any calibration. The infrared sensor is an ideal solution for all web edge detection and web guiding needs.

Edge position measurement has applications in:

- Web edge detection for web guiding applications
- Carpet edge detection
- Stack position detection
- Sheet alignment detection
- Leading edge detection in electronics manufacturing, etc.

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Width Measurement Sensor

Apart from edge position measurement, the Roll-2-Roll® Sensors can also be used for width measurement and monitoring. For example, from the position of two edges of a web the web width can be determined. Web width measurement can be used to monitor the width of a laminated web, folded and glued web, folded sleeve, blown film extrusion width monitoring, etc.

Width measurement has applications in:

- Web width measurement

- Slit trim width monitoring
- Manufactured parts inspection
- Rod diameter verification
- Bottled cap presence/absence detection

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Sensor for web width measurement and monitoring

String or Thread Detection Sensor

Sensor for thread or string counting and monitoring

The sensor technology's 0.0635 mm resolution also enables detection of very thin object such as a string or a thread. The position of the string can be measured with ±0.127 mm repeatability. The sensor can also be used to detect the presence of one or more strings, count the number of strings, measure the distance between two strings, or the distance between the first and the last string, or the distance between consecutive strings.

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Contrast Position Sensor

The Roll-2-Roll® Sensors not only detects the edge position but also the position of a contrasting feature on the web. A visible light source (white LED) is used to pick up a change in visible contrast on the material. Using different operating modes, various transitions in contrasts can be picked and measured by the sensor. The contrast can be a transition from light to dark or from dark to light.

The application for contrast position sensing include:

- Contrast guiding based on a contrasting edge on the web
- Line guiding based on a contrasting line on the web
- Trim width monitoring on printed webs
- Coating width monitoring, etc.

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Sensor for contrast detection and line guiding

Mark Detection (Visible or UV) Sensor

Sensor for UV mark detection or registration mark detection

Contrasting marks such registration marks or defect marks can be detected using the Roll-2-Roll® Sensor. Both visible and UV florescent marks can be detected by the sensor. The contrasting make can be a dark mark on the a light web or a light mark on a dark web.

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