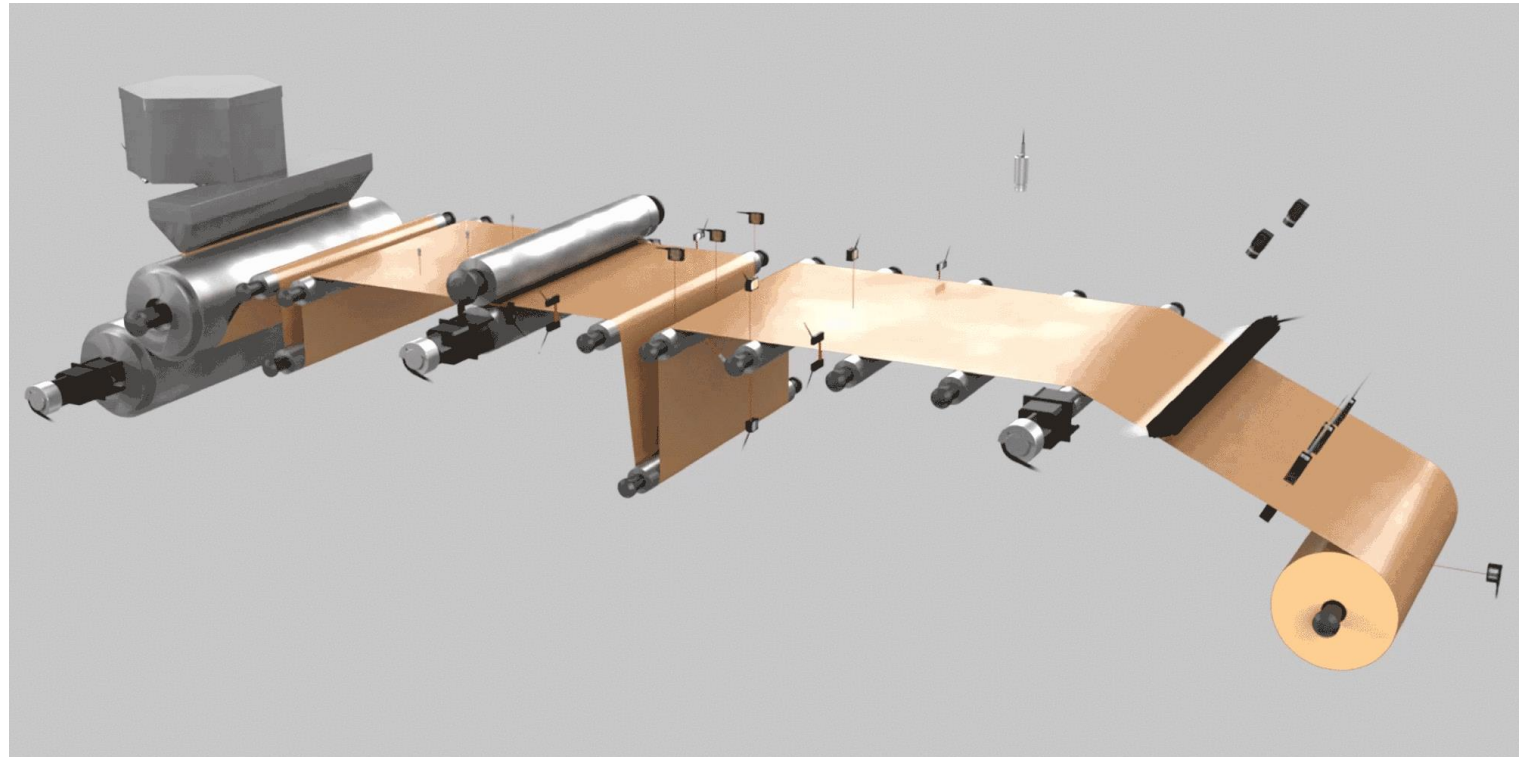


Roll-to-Roll Measurement and Inspection Solutions





Winding Control

The need for winding control

In roll-to-roll manufacturing, any errors in winding control can cause the sheet to tear or meander, resulting in a cone-shaped roll of material that cannot be used in post-processing.

High-accuracy winding control ensures efficient production of high-quality products.



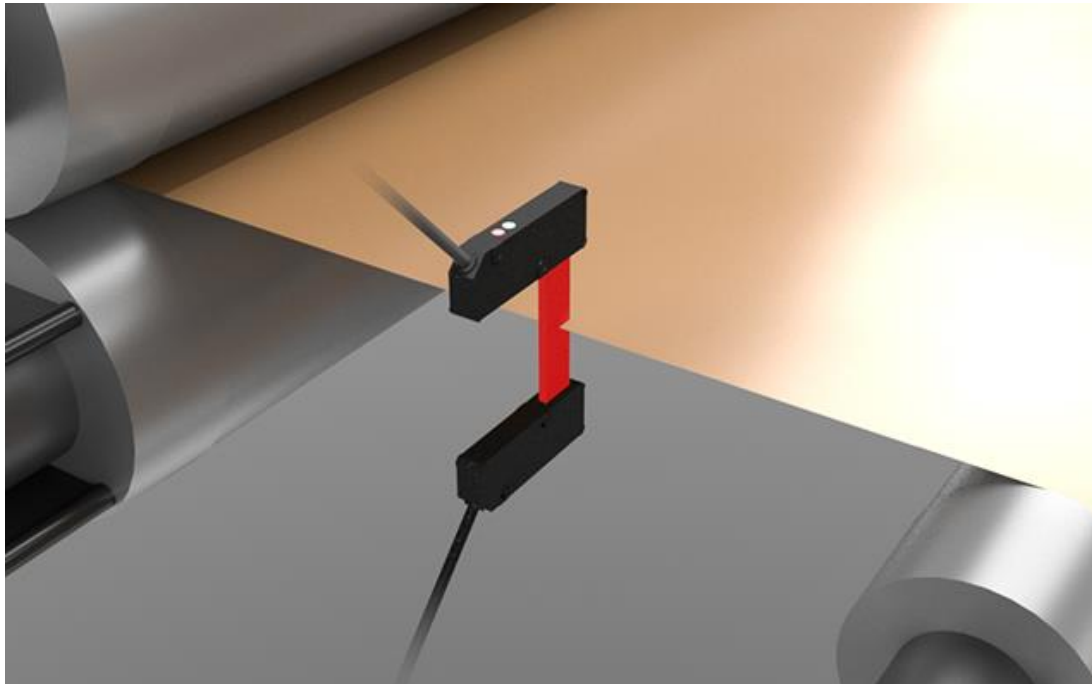
Thickness Measurement

The need for thickness measurement

Checking for variations in sheet thickness before winding prevents defects such as gaps in the roll material.

Thickness information can also be used to review the rolling process, allowing for improved quality

Meander control of sheet material



Product Used

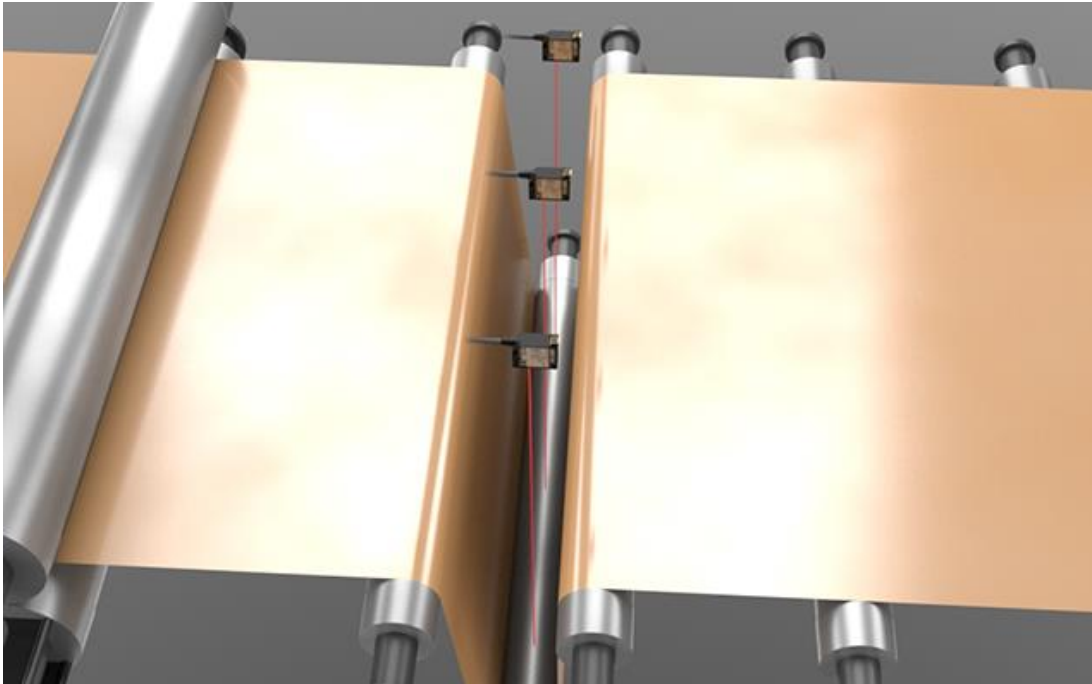
Through-beam Edge sensor
TD-1 Series

The TD1 series of through-beam edge sensors help prevent sheet material meandering. Meandering during winding in the manufacturing process can result in abnormal quality, which causes wrinkles and elongation of sheet material.

Using two TD1 series sets allows for simple meander control at up to $\pm 10 \mu\text{m}$.

Such high-accuracy EPC (Edge Position Control) meander control enables improved yield and predictive maintenance.

Offset roller position control



Product Used

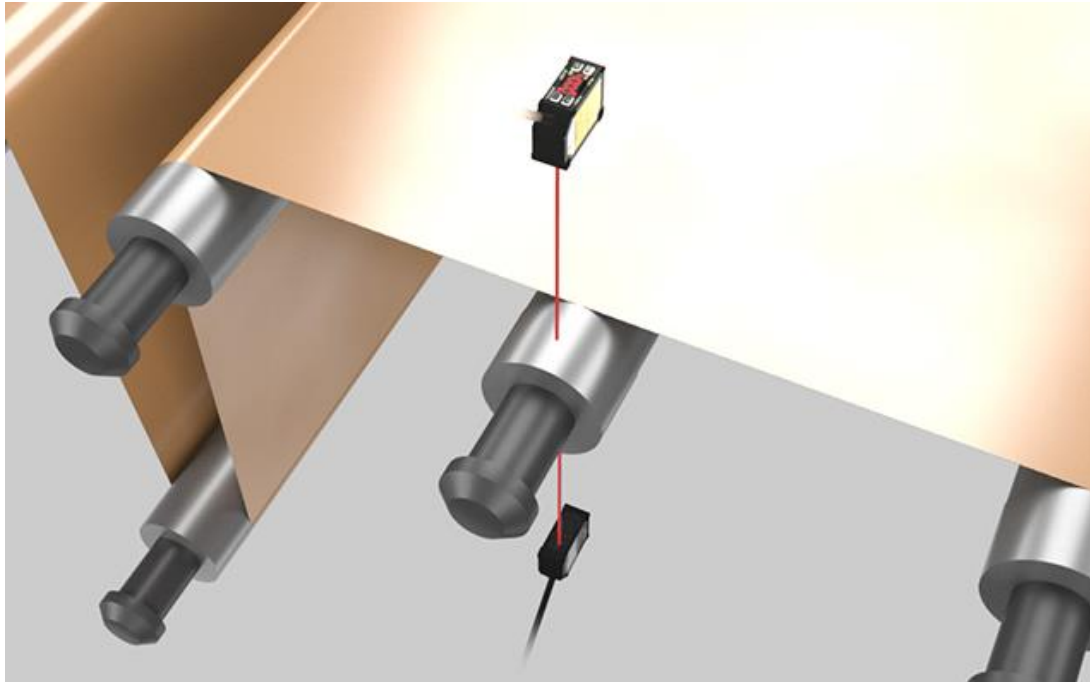
TOF Type with built-in Digital Panel
TOF-DL Series

Using the TOF-DL series makes it possible to monitor the tension of the sheet material by detecting the vertical position of the offset roller.

Position detection with the TOF-DL is possible at a distance of up to 2.5 m.

Increasing the material speed on the feed side when the offset roller is lowered or reducing the speed when the roller is raised ensures stable sheet control.

Roller deflection measurement



Product Used

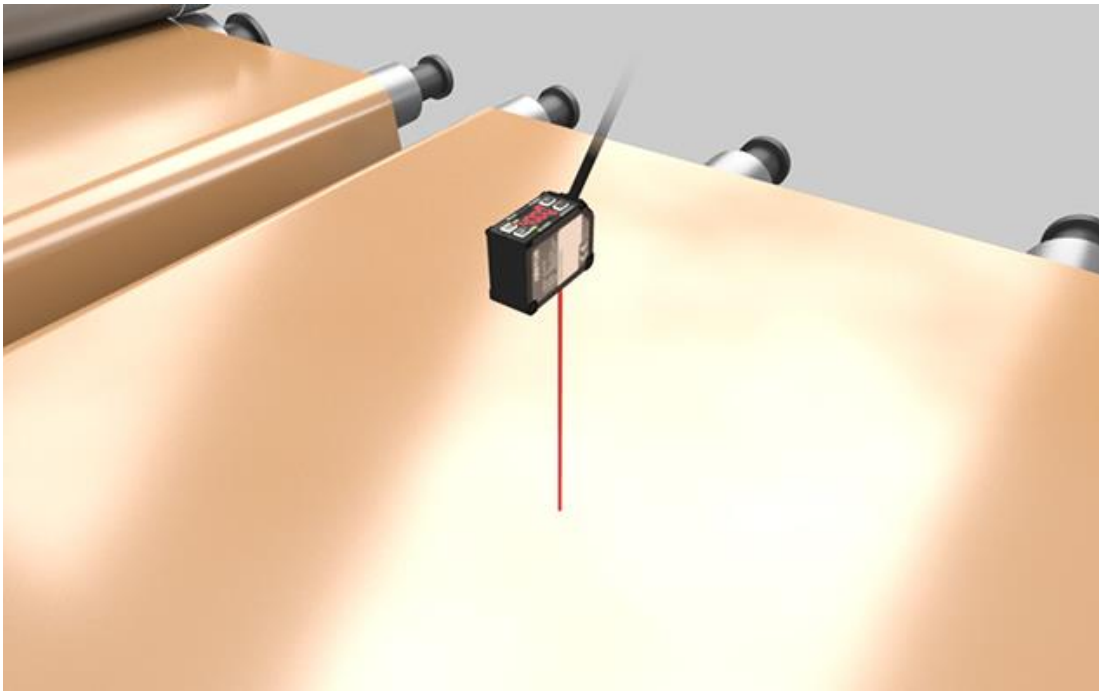
Compact Laser Displacement Sensor
CD22 Series

CD22 series laser displacement sensors are used to adjust the position of the roller according to the amount of meandering of the sheet material.

The compact size of the CD22 makes it easy to install within the equipment.

The roller height is adjusted based on the roller position data from the CD22 in order to control meander.

Measurement of sheet material flap amount



Product Used

Compact Laser Displacement Sensor
CD22 Series

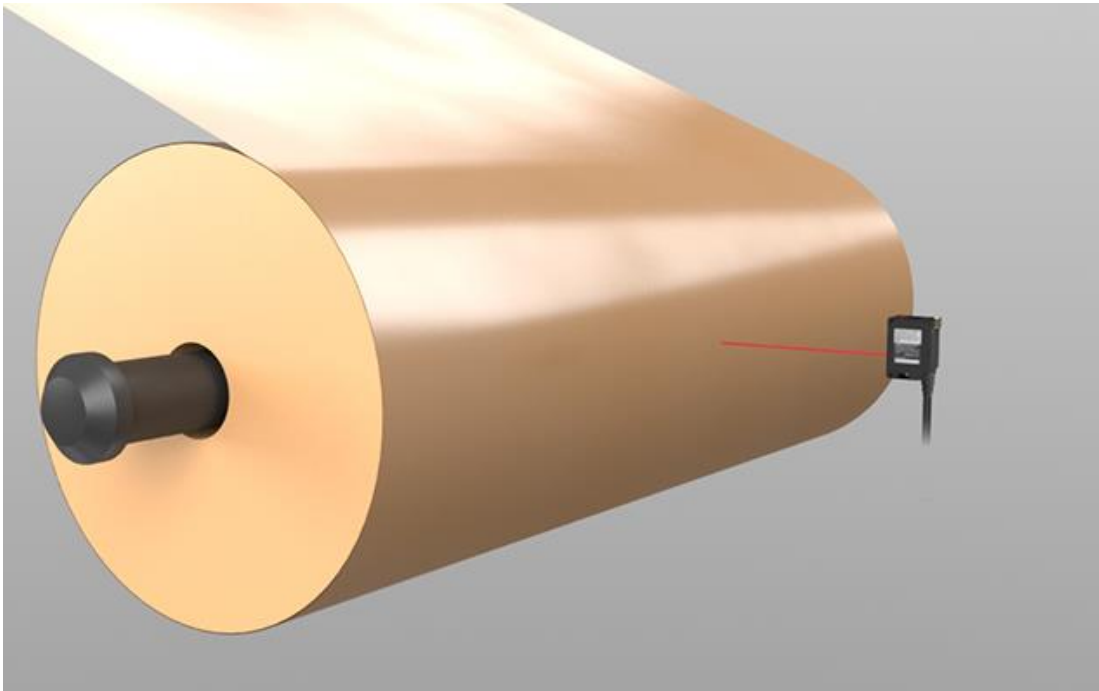
A CD22 series laser displacement sensor is used to measure the amount of flapping in the sheet material.

The faster the feed speed, the more the material will flap. This makes it possible to monitor the speed simply by measuring the amount of flapping.

The ability to provide feedback control to the motor and reduction gear ensures the feed speed is optimum for the material

Resin Sheet Production- Winding Control

Detection of remaining roll amount



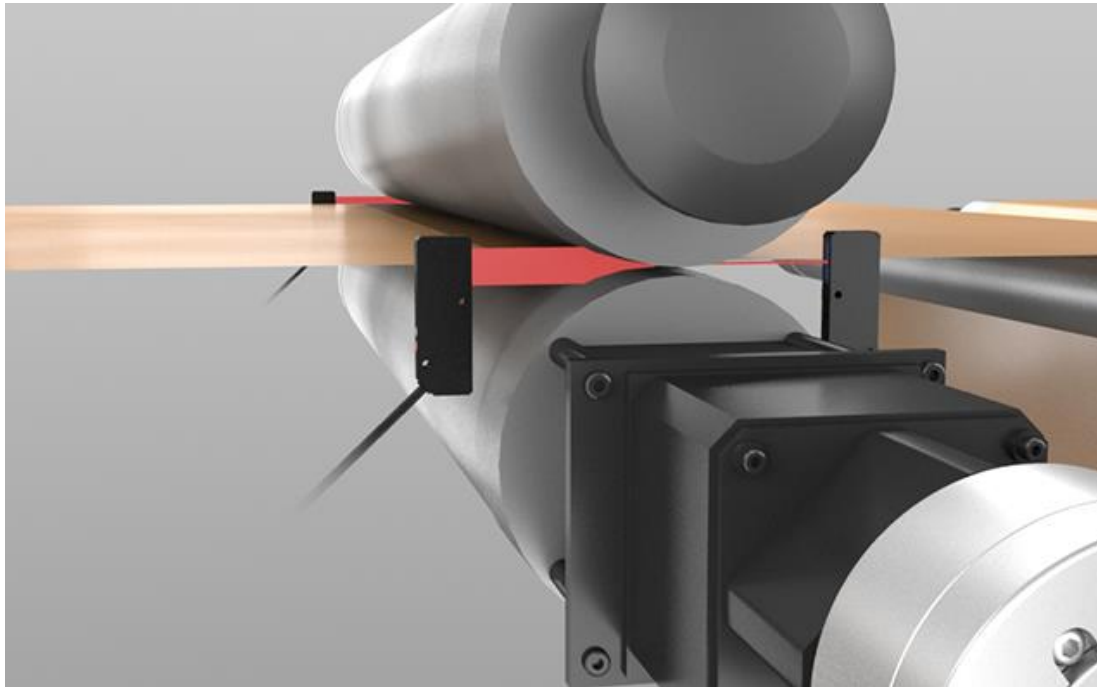
Product Used

TOF type with built-in Digital Panel
TOF-DL Series

Measure the sheet roll diameter using the TOF-DL series.

Whereas conventional setups required regular monitoring by workers, the TOF-DL makes it possible to predict replacement timing in advance based on preset amounts, allowing for a reduction in the time required for monitoring.

Roller gap measurement

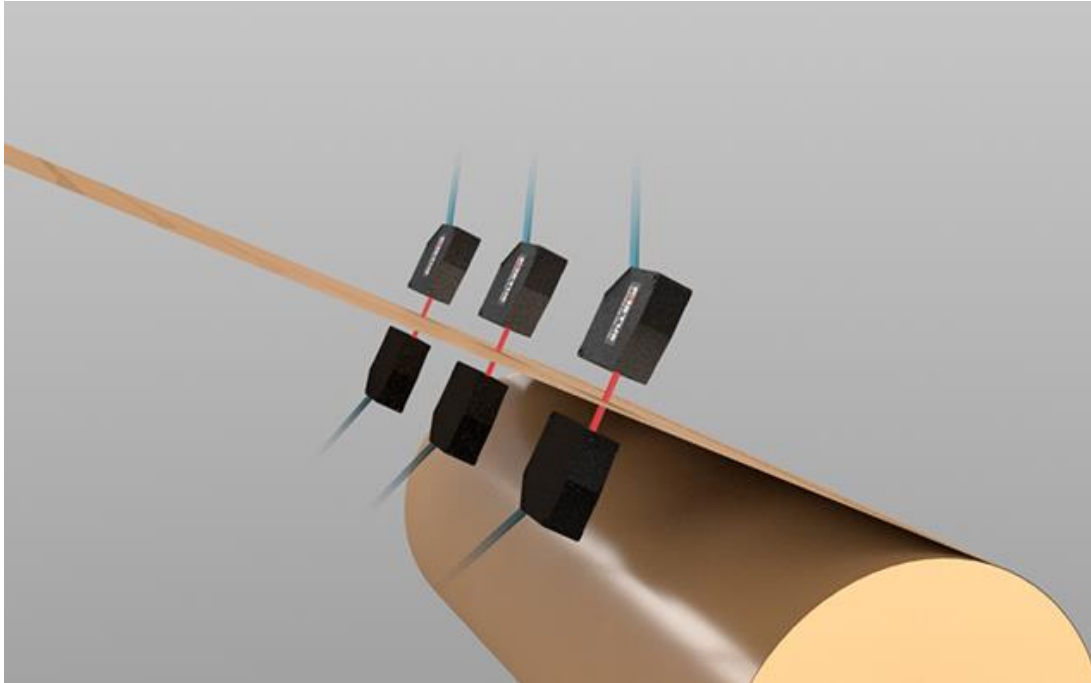


Product Used

Through-beam Edge Sensor
TD1 Series

The TD1 series of through-beam edge sensors measures the gaps between rolling rollers. A greater gap means increased sheet thickness, and a smaller gap means excessive thinness. Maintaining a steady gap makes it possible to ensure a constant rolling thickness. Control output also allows for thickness abnormalities to be output with an ON/OFF signal.

Thickness measurement of sheet material



Product Used

Ultra High Accuracy Laser Displacement
Sensor CDX Series

The CDX series laser displacement sensor can be used to inspect sheet material thickness before winding is performed.

With the world's number 1 linearity at $\pm 0.015\%$ F.S., the CDX enables high-accuracy thickness measurement.

In addition, the non-contact measurement method makes it possible to inspect the sheet material without causing any damage.