# Slack control on winders and unwinders

**Industries:** Steel industry
**Application type:** Monitoring

## Description

When large rolls of material are slit into smaller units and rewound, precise control of the slack between the two rolls is critical. If one of the rolls moves at an uneven speed, this can lead to excessive tension or slack in the loop, which can damage the material and cause waste. To prevent this, Dimetix Laser Distance Sensors are installed above the loop, pointing downwards to the underside of the loop. The sensors measure the distance of the loop to a fixed reference position and provide continuous feedback to the system. This allows winders and unwinders to react in real time to keep the tension constant and ensure smooth, uninterrupted production.

**Benefits of our Laser Distance Sensor:**

- **High measuring accuracy:** With an accuracy of ±1 mm, Dimetix Sensors ensure precise control of the loop position and effectively prevent tension losses or material overstretching.
- **Contactless measurement:** The Laser Distance Sensors measure without contact and thus minimise wear on the material, which extends the service life of the material and the machine components.
- **Trouble-free integration:** The sensors can be easily installed in hard-to-reach places without affecting the production process. They retain their accuracy even at large measuring distance
- **Efficient process control:** The real-time feedback from the sensors enables automatic adjustment of the rollers and thus optimises the entire production process, which increases material efficiency and reduces waste..
- **Reliable even in harsh industrial environments:** Dimetix Sensors are robust and can withstand demanding environmental conditions such as dust, dirt and vibrations, which increases their usability and longevity

## Dimetix Sensors – the solution for applications with high precision requirements

Thanks to the clearly arranged product portfolio the evaluation of a suitable Dimetix Laser Distance Sensor is simple and uncomplicated.

Dimetix sensors offer numerous features, which are integrated in each and every device as standard, including, among others, various interfaces like SSI, RS-422/485, RS-232 and 2 digital outputs.
Optionally, the Industrial Ethernet interfaces PROFINET, EtherNET/IP and EtherCAT are also available. Furthermore, all devices are IP65-protected and impress with a weight of less than 500 grams!

Particularly noteworthy, however, is the accurate measurement of 1 millimeter over distances of up to 500 meters, even under the most extreme conditions. This is possible with the sensors of the types DPE, DEN and DEH.

No less interesting are sensors of types DAE, DAN and DBN. Preferably, they can be used for projects which do not require a range over 500 meters or are cost-sensitive.

| | **DPE-10-500** | **DPE-30-500** | **DEN-10-500** | **DEH-30-500** |
|---|---|---|---|---|
| **PARTNUMBER** | 500630 | 500636 | 500637 | 500638 |
| **SPECIFICATION** | | | | |
| Typical accuracy ≅ ± 2σ | ± 1 mm | ± 3 mm | ± 1 mm | ± 3 mm |
| Mensurierung range on natural surfaces | 0.05…~100 m | 0.05…~100 m | 0.05…~100 m | 0.05…~100 m |
| Measuring range on reflective foil | ~0.5…500 m | ~0.5…500 m | ~0.5…500 m | ~0.5…500 m |
| Max. measuring rate | 250 Hz | 250 Hz | 100 Hz | 100 Hz |
| Operating temperature | -40…+60°C | -40…+60°C | -10…+50°C | -10… +60°C |

| | **DAE-10-050** | **DAN-10-150** | **DAN-30-150** | **DBN-50-050** |
|---|---|---|---|---|
| **PARTNUMBER** | 500633 | 500632 | 500634 | 500635 |
| **SPECIFICATION** | | | | |
| Typical accuracy ≅ ± 2σ | ± 1 mm | ± 1 mm | ± 3 mm | ± 5 mm |
| Mensurierung range on natural surfaces | 0.05…~50 m | 0.05…~100 m | 0.05…~100 m | 0.05…~50m |
| Measuring range on reflective foil | ~40…50 m | ~40…150 m | ~40…150 m | |
| Max. measuring rate | 100 Hz | 100 Hz | 100 Hz | 10 Hz |
| Operating temperature | -40…+60°C | -10…+50°C | -10…+50°C | -10…+50°C |