

Height Measurement in Road Paving

Industries: Process
Application type: Positioning / Monitoring

Description

In road paving work, it is essential to accurately



Cold Milling Machine

measure the thickness of asphalt or concrete being laid, as well as the depth of old pavement removed prior to resurfacing. Precise height measurement not only ensures efficient use of materials but also helps achieve a smooth, level, and uniform road surface, reducing rework and improving overall construction quality.

The **Dimetix Laser Distance Sensor** is mounted on the exterior of paving equipment, facing the road surface, and continuously measures height as the machinery moves. Its high-speed, real-time measurement capability allows operators to monitor surface levels continuously and make adjustments on the fly. With an IP65 rating for dust and water protection, combined with additional safeguards implemented by system integrators, the sensor delivers reliable and consistent measurements in outdoor environments,

even under challenging weather conditions or on dusty and uneven surfaces. By integrating this measurement system into paving operations, contractors can:

- Apply asphalt or concrete efficiently, minimizing waste
- Monitor material usage in real time
- Achieve a consistently smooth surface finish

Customer Advantages

- **No reflectors required:** The sensor delivers highly stable height data with minimal noise, even without targets on the measurement surface.
- **High precision:** With a measurement accuracy of ± 1 mm and repeatability of ± 0.3 mm, the results are reliable and repeatable.
- **Robust environmental performance:** Dust, debris, and outdoor conditions have minimal impact, making the sensor highly durable for field use.
- **Visible laser spot:** The laser makes it easy to see exactly what is being measured, simplifying alignment and monitoring.
- **Easy installation:** Magnetic clamps allow quick attachment to heavy machinery and effortless removal.



Laser Distance Sensor



DIMETIX APPLICATION EXAMPLE

AE-2201

- **Wide operating temperature range:** From -40°C to +60°C, the sensor operates reliably in all seasons and weather conditions.

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 $\cong \pm 2\sigma$ | ± 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 $\cong \pm 2\sigma$ | ± 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 |