

## High-Precision Front Axle Inspection

**Industries:** Automotive  
**Application type:** Positioning

### Description

As part of the inspection of front axles in automotive production, Dimetix Laser Distance Sensors offer a highly precise and efficient alternative to conventional measurement methods. These sensors enable high-precision distance measurements and are particularly well suited for applications in the area of steering geometry. They simplify the measurement setup and increase efficiency.



*Fig 1: Measuring plate and a positioning plate*

To ensure durability and reliability even in demanding environments, the sensors are housed in robust protective enclosures that shield them from external influences or damage.

This system replaces the inaccurate manual measurement method with a precise and reliable solution. It increases effective measurement performance and contributes significantly to improving measurement accuracy and inspection efficiency.

Thanks to their proven reliability and high performance, the sensors have already been successfully deployed in many automotive production plants, underlining their broad applicability and high value.

### System Overview

The system consists of two main components: a measurement plate and a positioning plate (Fig. 1). A Dimetix DAN-10-150 Sensor is mounted on each side of the measurement plate. These sensors measure precisely at defined points on the positioning plate and detect the corresponding distances with high accuracy (Fig. 2).

Thanks to their high precision and reliable performance, the sensors are already being used successfully in several production environments within the automotive industry. There, they make a key contribution to quality assurance in axle measurement. Their easy integration and versatile applicability make them a long-term solution for demanding measurement tasks in series production.



*Fig 2: Measured results are shown on the display*



## DIMETIX APPLICATION EXAMPLE

AE-0410

### Advantages of DIMETIX DAN-10-150 Sensors

- **Accuracy:** Ensures precise measurements of  $\pm 1$  mm for high-quality inspections.
- **Repeatability:** Delivers consistent results with  $\pm 0.3$  mm repeatability, increasing reliability.
- **Visible Laser Beam:** Simplifies alignment, saving time and effort.
- **Anti-Interference:** Operates reliably even in challenging environments.
- **Integration:** Easily connects to PLCs or PCs, streamlining data handling.
- **Maintenance-Free:** Eliminates the need for regular maintenance, reducing downtime and costs.

### 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
<b>PARTNUMBER</b>	500630	500636	500637	500638
<b>SPECIFICATION</b>				
Typical accuracy $\cong \pm 2\sigma$	$\pm 1$ mm	$\pm 3$ mm	$\pm 1$ mm	$\pm 3$ 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
<b>PARTNUMBER</b>	500633	500632	500634	500635
<b>SPECIFICATION</b>				
Typical accuracy $\cong \pm 2\sigma$	$\pm 1$ mm	$\pm 1$ mm	$\pm 3$ mm	$\pm 5$ 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