

## Level monitoring on a fertilizer tank

**Industries:** Process  
**Application type:** Monitoring

### Description



Accurate monitoring of liquid fertilizer levels in storage tanks is crucial for efficient inventory management, process optimization, and preventing overfills or shortages. Traditional methods such as ultrasonic sensors and hydrostatic level transmitters often struggle with challenges like inaccurate readings caused by foam or vapor, compatibility issues with different liquids, and the constant need to adjust for varying liquid densities. In our system, a Laser Distance Sensor is mounted at the top of a vertical guide tube inside the tank, where a float moves freely with the liquid level. The sensor continuously measures the distance to the float, providing real-time, precise level data that directly reflects the fertilizer level in the tank.

The guide tube ensures that the float moves smoothly and consistently, even under dynamic conditions, resulting in stable and reliable measurements ideal for process monitoring and automation. The high precision of the laser sensor delivering millimeter level accuracy makes it well-suited for challenging industrial environments where traditional sensors might fail. Additionally, because the laser sensor does not come into contact with the liquid, it avoids common issues such as wear, clogging and corrosion, which significantly reduces maintenance needs and enhances long-term reliability.



One of the key advantages of this laser-based solution is that it automatically adapts to any liquid without requiring manual adjustments for density changes. Unlike hydrostatic level transmitters that must be recalibrated whenever the liquid type changes - a process that can lead to errors and added complexity - our system maintains consistent accuracy regardless of the liquid's properties. This simplicity and flexibility make the Laser Distance Sensor a superior choice for customers who frequently switch between different liquids. Furthermore, the continuous level data provided by the sensor can be seamlessly integrated with control systems, remote monitoring platforms, and alarm systems. This integration enables advanced features such as automatic refilling, predictive maintenance alerts, and optimized inventory management. Overall, our laser-based approach offers a modern, robust, and efficient solution for liquid level monitoring in storage tanks, combining ease of use with high accuracy and low maintenance, and delivering significant advantages over traditional measurement methods.



**DIMETIX APPLICATION EXAMPLE**

**AE-1901**

**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.

	<b>DPE-10-500</b>	<b>DPE-30-500</b>	<b>DEN-10-500</b>	<b>DEH-30-500</b>
<b>PARTNUMBER</b>	500630	500636	500637	500638
<b>SPECIFICATION</b>				
Typical accuracy $\cong \pm 2\sigma$	$\pm 1 \text{ mm}$	$\pm 3 \text{ mm}$	$\pm 1 \text{ mm}$	$\pm 3 \text{ mm}$
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

	<b>DAE-10-050</b>	<b>DAN-10-150</b>	<b>DAN-30-150</b>	<b>DBN-50-050</b>
<b>PARTNUMBER</b>	500633	500632	500634	500635
<b>SPECIFICATION</b>				
Typical accuracy $\cong \pm 2\sigma$	$\pm 1 \text{ mm}$	$\pm 1 \text{ mm}$	$\pm 3 \text{ mm}$	$\pm 5 \text{ mm}$
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