

## Hot Steel Level Monitoring

**Industries:** Metal Industry  
**Application type:** Level measurement of hot metall

### Description

For monitoring hot steel in molds and controlling conveyor belts to ensure optimal fill levels, the **Dimetix DPE-10-500**



Fig 1: pouring process

**Laser Distance Sensor** offers significant advantages. This sensor is engineered to handle harsh environments, making it ideal for measuring the level of molten steel within molds, a crucial step to avoid overflows or underfills during the casting process. Its precision, ability to withstand high temperatures, and capacity to handle highly reflective surfaces like molten and glossy steel ensure reliable, consistent measurements. These features set it apart, making the **DPE-10-500** a preferred choice for the steel industries.

When paired with a conveyor belt system, the DPE-10-500 sensor can detect the optimal fill level in real-time, triggering automatic adjustments to the belt's speed or halting operations when the desired fill is achieved. This reduces material wastage and ensures high-quality production standards.

### Customer Advantages:

- **High Precision and Accuracy:** Dimetix Laser Distance Sensors deliver measurements with an accuracy of  $\pm 1$  mm and a repeatability of  $\pm 0.3$  mm.
- **Rapid Measurement Speed:** Dimetix sensors can capture measurements at high speeds, up to 250 Hz.
- **Robust Environmental Resistance:** Dimetix laser sensors are engineered to operate reliably in harsh industrial condition with a wide operating range of  $-40^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ . In a specialized protective housing, higher operating temperatures are also possible.
- **Optimized Performance on Reflective Surfaces:** The DPE-10-500 model is specifically designed to handle the high reflectivity of molten steel without sacrificing measurement accuracy. This capability is crucial for maintaining precise measurements in applications involving shiny and reflective surfaces.



Fig 2: conveyor belt with molds



**DIMETIX APPLICATION EXAMPLE**

**AE-0213**

**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