Slab production

Industries: Steel Industry
Application type: Slab dimensions measurment

Fig 1: pouring pan

Description

When producing slabs (large blocks of cast steel), it is crucial to control the exact dimensions, as any deviation can affect subsequent processing and quality. Our high-precision Laser Distance Sensors can accurately measure the thickness, length and skew of the slabs during cooling and transport to ensure they meet specifications. Even small deviations can lead to problems in the downstream rolling processes, resulting in scrap or additional corrections

Installation and requirements for Laser Distance Sensors:

- **Positioning of the sensors:** Two laser sensors are offset, placed on opposite sides of the slab and aim at the respective edges. Each sensor measures the distance from its side to the edge of the slab.

- **Need for high accuracy:** Exact width measurements are critical for hot and reflective slabs to meet quality requirements. Dimetix Sensors, such as the DPE-10-500, offer ±1 mm accuracy, which is critical for production lines that must meet strict dimensional tolerances to avoid material waste or rework.

Fig 2: Slab production

- **Robust performance in demanding environments:** As slabs are often hot and reflective, our laser sensors such as the DPE-10-500 are ideal as they can handle high temperatures and reflective surfaces without sacrificing measurement quality.

- **Real-time adjustments:** In some applications, this configuration and our fast measurement rate can also trigger real-time adjustments in the production process, such as automatic alignment corrections on the line if a slab is out of tolerance. This increases efficiency and reduces material loss.

Customer benefits:

- **Improved quality control**: With precise measurements of ±1 mm, greater consistency in slab production can be achieved, ensuring each unit meets exact specifications.
- **Reduced material waste**: By maintaining tolerances, material waste is minimised, resulting in cost savings on raw materials.
- **Increased production efficiency:** Real-time measurements allow adjustments to be made to the production line, reducing downtime and increasing throughput.

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