Slab Position Monitoring

Industry: Metall
Application type: Monitoring

Description

Fig 1: Harsh environment in the furnace area

voestalpine Rail Technology GmbH, a global leader in providing system solutions for railway infrastructure, successfully resolved this issue by utilising the Dimetix Sensor.

The objective of this application is to reliably detect the presence of slabs and determine their approximate position in terms of depth. The primary challenge in this measurement lies in the presence of extraneous light radiation from the glowing background, the rising clouds of smoke and flames in the intermediate area, and the reflections of the required protective glass. Failure to detect a slab would have the potentially serious consequences of a crash.

The laser sensor previously used was struggling to cope with the above-mentioned influences and challenges. For this reason, the customer opted to use the Dimetix DPE-30-500 Laser Distance Sensor as an alternative for testing purposes. After an 8-week testing period, the customer reported no errors following feedback provided to us. The sensor's stable measurement behaviour prompted the customer to switch to the Dimetix Laser Distance Sensor.

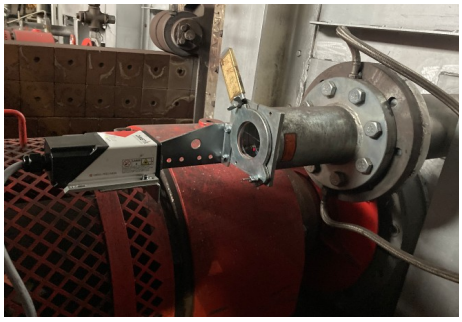

Fig 2: Position of the Laser Distance Sensor

Advantages of the Dimetix Sensor:

- **Reliability:** Consistently accurate measurements – even in tough industrial conditions.
- **Visibility:** Clearly visible laser spot for quick and precise alignment.
- **Efficiency:** Non-contact position monitoring ensures smooth and reliable processes.
- **Durability:** Dependable performance in extreme temperatures from -40 to +60 °C.
- **Versatility:** Optional cooling housing for flexible use in demanding environments.

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