

Saw blade alignment

Industries: Wood and metal machines
Application type: Position measurement

Description

In this application two Laser Distance Sensors are mounted on each end of an extrusion to measure the difference in distance to the saw blade. A micro-controller records the distances and provides a quick and easy display of the front-to-back alignment for review as desired. The system includes misalignment tolerances to trigger an out-of-tolerance condition for the operator. These principles can easily be applied to any alignment application. By using at least three sensors, target straightness can also be monitored. The range of the available Dimetix Laser Distance Sensors enables measurement from a few inches up to 500 meters. On the micro-controller screen (shown in the second picture), two distances are displayed on the top line of the interface. The alignment dimension is shown below. The checkmark indicates that the measurement is within tolerance.



Fig 1: Gantry saw with Dimetix Laser

Customer advantage

- Easy installation thanks to visible laser beam
- Easy configuration thanks to the free software
- Operation in the largest temperature range (-40°C to +60°C) possible
- Measuring ranges up to 100 m on natural surfaces
- Measuring ranges up to 500 m on reflective foil
- Accuracy ± 1 mm
- Repeatability ± 0.3 mm
- Measurements can be acquired by a PLC or PC
- Maintenance-free operation



Fig 2: Controller unit



DIMETIX APPLICATION EXAMPLE

AE-0507

Dimetix Sensors – the solution for applications with high precision requirements

Thanks to the clearly arranged product portfolio the evaluation of a suitable Dimetix distance laser 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