

Monitoring of historical tower

Industries: Geodesy / Construction
Application type: Monitoring

Description

Geodetic permanent monitoring of historic buildings is designed to support redevelopment concepts. Historical buildings, including church buildings, are part of a nation’s cultural and social property, therefore, conservation is not only in the interests of the owners, but also in the public interest through the ordinance on the protection of monuments.



Fig 1: Dimetix Laser Sensor installed at the historical building “Blauer Turm” in Germany

In particular, when structural damage occurs, which necessitates a static consolidation, the potential damage caused by the often-existing precious and delicate works of art, such as frescoes, ceiling ornaments, etc., is considerable. Therefore the protective and security measures to be taken are usually costly. An engineering company has developed a monitoring concept with Dimetix Laser Distance Sensors, which monitors the movements of the historical building and elaborately investigates them. As you can see in figure

2, four Dimetix sensors were needed to monitor the external walls of this tower. Three additional lasers measure the distance wall to the stairwell. With this system every movement of the building is recorded.

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 ± 1mm
- Repeatability ± 0.3 mm
- Maintenance-free operation

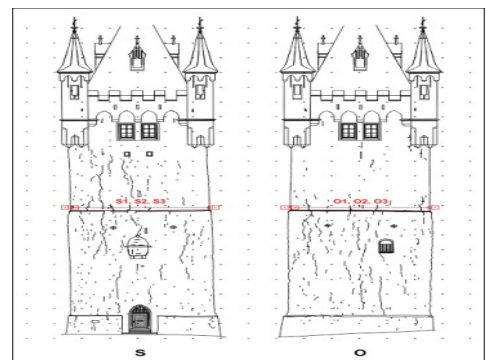


Fig 2: 4 Dimetix Laser Sensors



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	50 Hz	50 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	50 Hz	50 Hz	50 Hz	10 Hz
Operating temperature	-40...+60°C	-10...+50°C	-10...+50°C	-10...+50°C

