

Fiber optic deformation measuring system (광학변형 측정시스템)

GEMAC mbH is introducing a completely new deformation sensor. Through the fiber-optical measurement principle both the sensor and cables are entirely free of metal. The sensor is very suitable for the use in strongly disturbed areas (magnetic and electric arrays) and for measurements of lightning-endangered plants, for example for measurements of the blade deformation of wind-powered devices or of the deformation of steel constructions and bridges.

The sensor is attached on the top of the construction unit and measures - like a resistance strain gauge - the deformation at the measurement point. In difference to the resistance strain gauge the application is executable easily due to a form-locking point-to-point attachment.

The sensor acquires deformations in the range of $\pm 80 \mu\text{m}$ ($\pm 6000 \mu\text{strains}$). The deformation sensor has a very large lifetime also in the range of high deformations. Due to different constructional designs of the sensor head an adjustment to other measurement ranges is possible. The design of the sensor head enables its use in every climate zone.



Deformation Measurement System with Processing and Display Unit "GEMALUX 1.6"

Characteristics (Preliminary):

Measurement Range	$\pm 80 \mu\text{m}$ ($\pm 6000 \mu\text{strains}$)
Total Error	Max. $\pm 0,5 \mu\text{m}$
Resolution	$0,1 \mu\text{m}$
Sample Rate	1-100Hz
Number of Channels	max. 6 (GEMALUX 1.6), other configurations on request
Temperature Range	$-40^{\circ}\text{C} \dots +85^{\circ}\text{C}$
Interface	RS232, CAN, others on request
Power Supply	12...30 VDC, others on request