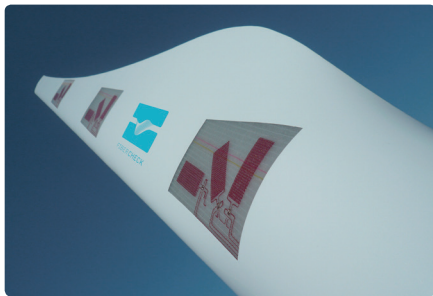


FIBERCHECK

Integrated embroidered sensor

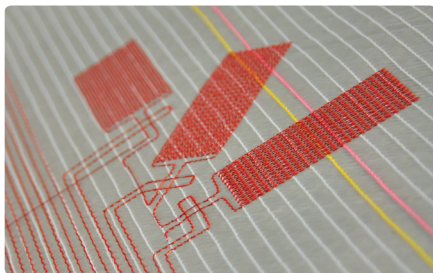


GENERAL DESCRIPTION

The constantan wire sensors are embroidered into a fiber fleece by means of advanced textile technology. They are then integrated into the fiber reinforced composite during the lamination process. This ensures perfect bonding within the composite material and a high durability of multimillion load cycles.

The stitched strain gauges continuously monitor the structure loads, rendering information on macroscopic modification of the component. Manufacturing is achieved in cost efficient mass production.

SPECIFICATION



SENSOR TYPE

Sensor wire material
Sensor principle
Resistance

STRAIN GAUGE

Constantan (Cu, Ni, Mn)
Resistive
1000 Ohm +/- 10 Ohm
(Any other values on request)

Sensor surface

Varies by wire diameter, e.g. 1,3 cm² per 100 Ohm

K-Factor

1,9

Temperature range

-40°C to 85°C

Features

- Application on curved surfaces possible
- Availability of large sensor areas
- Almost any geometry feasible
- Excellent connections with duromeres
- Direct integration of the sensors in composite manufacturing, or subsequent application to the component surface
- Low cost manufacturing
- Multi million load cycles

Evaluation

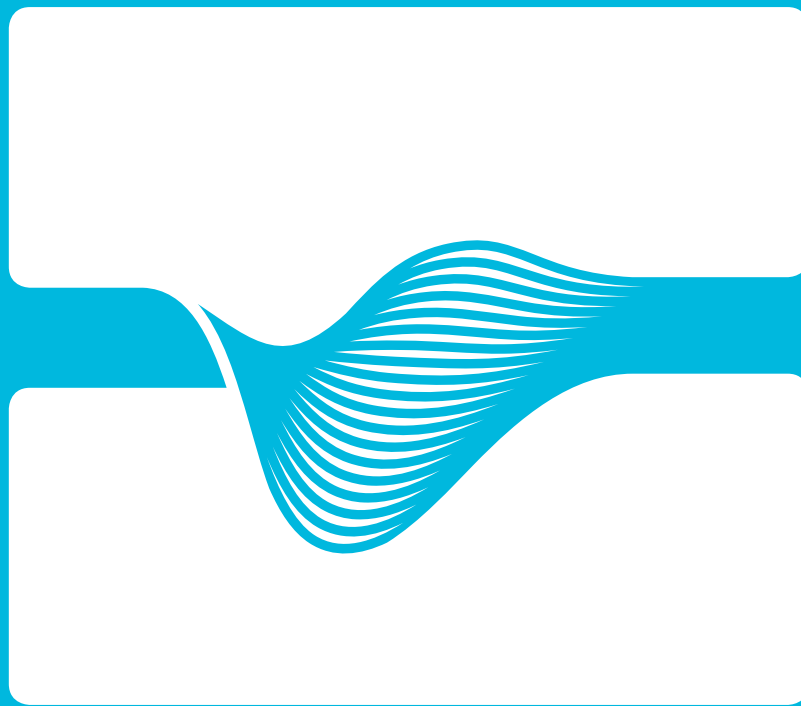
Wheatstone bridge

PERMANENT CONDITION MONITORING

The structural modifications lead to electric signal output of the strain gauges. The analysis unit is monitoring changes in these outputs. The continuous monitoring of strain, eigenfrequencies and the complete spectrum of frequencies enables the unit to render structure health information and loads. Data output is by graphic display, and can be transmitted via 2,4GHz-ISM-Band, mobile services or directly via USB port.

FIBERCHECK^{GmbH}

TECHNOLOGIE-CAMPUS 1 | 09126 CHEMNITZ
T +49 (0)371 531 36 485 | F +49 (0)371 531 836 485
INFO@FIBERCHECK.DE | WWW.FIBERCHECK.DE



FIBERCHECK