



# **Basics of Strain Gauge Installation and Strain Gauge Measurement Technology**

(Incl. Certification in accordance with VDI/VDE/GESA 2636 – course 1)

## **Agenda**

**Day 1**

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09.00 - 09.15 h	Welcome and introduction to the seminar program
09.15 - 10.15 h	Basics and mode of operation of a strain gage (SG)
<i>approx. 10.15 - 10.30 h</i>	<i>Coffee break</i>
10.30 - 10.45 h	<b>Overview of the SG installation procedure:</b> What needs to be done?
10.45 - 12.00 h	<b>Stepwise installation of a SG on a cantilever model - part 1 (practical exercise)</b> <ul style="list-style-type: none"><li>- Preparation of SGs</li><li>- Preparation of object</li><li>- Usage of rapid adhesive (Z70)</li></ul>
<i>approx. 12.00 - 13.00 h</i>	<i>Common lunch break</i>
13.00 - 14.45 h	<b>Stepwise installation of a SG on a cantilever model - part 2 (practical exercise)</b> <ul style="list-style-type: none"><li>- Check-ups of measuring point</li><li>- Cable reliefs and cable fixings</li><li>- Protection of measuring point with silicone SG250</li></ul>
<i>approx. 14.45 - 15.00 h</i>	<i>Coffee break</i>
15.00 - 17.00 h	Usage and installation of SGs with Ni-plated copper leads and usage of adhesives X60 (practical exercise)
17.00 h	End of seminar day 1

**Day 2**

09.00 - 10.00 h Installation of SGs with integrated solder pads and hot curing epoxy adhesives EP150 and EP310S (practical exercise)

10.00 - 10.45 h **Continuation of previous installation with X60**  
- Soldering of wires  
- Electrical check-up of measurement point  
- Cable relief and fixture of cables  
- Protection of measuring point with polyurethane PU140

*approx. 10.45 - 11.00 h Coffee break*

11.00 - 12.00 h **Wheatstone Bridge (WB) and compensation of different types of influences with SGs**  
- Fundamentals and principle of operation of the WB  
Application modes of the WB  
- Temperature compensation

*approx. 12.00 - 13.00 h Common lunch break*

13.00 – 13.45 h Examples, selection and overview of components for a SG installation

13.45 - 14.30 h Opportunity for a certification exam according to standard of Association of German Engineers (VDI/VDE/GESA 2636, course 1)

*approx. 14.30 - 14.45 h Coffee break*

14.45 - 16.00 h **Strain measurement with own cantilever model**  
(practical exercise)  
- Measurement  
- Discussion results and error estimation

16.00 - 16.30 h Protection of measuring points with permanently elastic materials AK22 and ABM75 (practical exercise)

16.30 - 16.45 h Inspection of previous SG installation with hot curing epoxy adhesives

16.45 - 17.00 h Summary, overview and end of seminar