Terms/Explanations
Strain Gages

Strain gage (S/G)	Strain Gage. The S/G changes the electrical resistance proportionally to the applied strain.

Gage factor

The sensitivity of a S/G is expressed by the ratio of the relative resistance change to the strain:

$$k = \frac{\Delta R}{R} \times \frac{1}{\varepsilon}$$

R Resistance of S/G
ΔR Resistance change
due to strain
ε Strain of S/G

Transverse sensitivity

Ideally S/G should only react with a resistance change as expressed by the gage factor when strain is applied in the «active» direction of the gage. A resistance change is also observed when strain is exerted transverse to its «active» direction. This is known as transverse sensitivity and is expressed in percent of the gage factor.

Temperature compensation

When the temperature of the measurement location changes, an output signal is produced. This is due to the change in specific resistance and the thermal expansion of the object. This signal which is known as the temperature output of the measurement point is independent of the mechanical load applied to the object to be measured. The temperature output of a strain gage is controlled through the material properties such that the temperature effects are largely compensated.

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