

STRAIN GAUGE

FOS MODEL

FOS Strain Gauge offers small size, high accuracy, immunity to EMI/RFI, resistance to corrosive environments, high temperature range, and self-compensated capability.

Roctest's fiber-optic strain gauges are the best choice for the high-performance strain measurements. FOS gauges are available in temperature compensated (FOS-C) and non-temperature compensated (FOS-N).

Thermally compensated strain gauges refer to a gauge which do not respond to thermal effect of material under tests, while thermally non-compensated strain gauges measure the expansion and contraction of material due to mechanical stress or thermal effect. Note that in literature, non-compensated strain gauge refer as not sensitive to temperature.

The strain gauges are designed around a Fabry-Perot interferometer (FPI) which consists of two mirrors facing each other deposited on tips of two multimode 50/125 optical fibers inserted into a micro capillary. The space separating the mirrors is called the cavity length. Light reflected in the FPI is wavelength-encoded in exact accordance with the cavity length. When bonded to a specimen, the strain transferred to the gauge is converted into cavity-length variations and then, in engineering units by the readout.

FOS strain gauges are insensitive to any pulling or manipulation of the incoming fiber. This feature is advantageous when the gauge is embedded in composite materials. Long-term reliability of the gauge length is guaranteed by the welding method that avoids an internal creep that may arise from the use of adhesives.