



HIGH ENDURANCE

High Endurance Strain Gauges DSF series

These gauges are designed for fatigue tests, and can reach a fatigue life of over 10 million times at a strain level of $\pm 3000 \mu\epsilon$. Compared to previously (1 million times at $\pm 1500 \times 10^{-6}$ strain), these are gauges of exceptionally high durability.

In aviation and other areas, repeated load tests of large elongation of composite materials are conducted. However, it had been necessary to adhere a new strain gauge frequently as a gauge reached its fatigue life. The DSF series greatly reduces time and cost of adhering gauges.

Operating temperature range -60~+200°C	Applicable adhesives CN -60~+120°C EB-2 / C-1 -60~+200°C
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Please specify the type number as shown in the example below.

DSFLA-2-350-3LJB

Length in meter and type of integral leadwire
Gauge resistance
Gauge length
Gauge series name

Gauge pattern	Type	Gauge size(mm) Length	Gauge size(mm) Width	Backing size(mm) Length	Backing size(mm) Width	Resistance Ω
DSFLA-2-350	DSFLA-2-350	2	2	8	3.3	350
DSFLA-5-350	DSFLA-5-350	5	2	11	3.2	350

The strain gauge of this series is not self-temperature-compensated. It is recommended to measure the thermal output prior to the actual measurement using a dummy test piece made of the same material as the object to be measured.

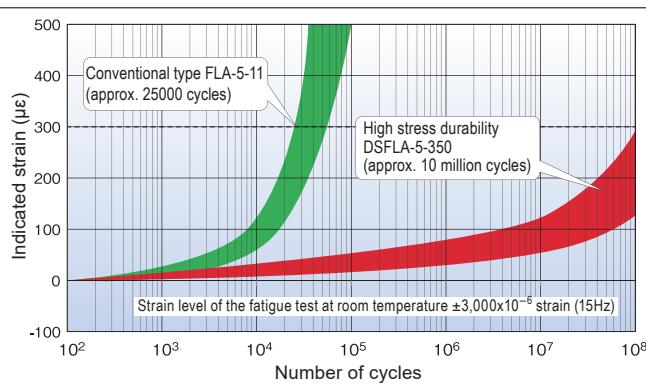
Fatigue Limit

This number is determined as the number of cycles in case a mechanically repeated strain of $\pm 3000 \times 10^{-6}$ strain is applied to the strain gauge before the indicated strain changes by $\pm 300 \times 10^{-6}$ strain.

Minimum order quantity is 10 strain gauges.

These strain gauges are available with integral leadwires attached. (made to order)

Example of strain gauge fatigue test results



BENDING STRAIN

One-side Strain Gauges DD series

These gauges are intended for measuring the bending and tensile strains separately by simply bonding the gauges on one side of a plate or beam. It works on the assumption that the strain distribution in the section of the specimen is linear along the height of the section when the section is subjected to both tensile and bending stress. The gauges are effectively used for the measurement of a box construction in structures such as bridges or pressure vessels, where the reverse side of the measurement object is not accessible for strain gauge installation.

Operating temperature range -10~+70°C	Applicable adhesives CN -10~+70°C P-2 -10~+70°C
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Please specify the type number as shown in the example below.

DD-1-15(-F)

Option F: LEAD-free soldering of strain gauge
Gauge backing length
Gauge length
Gauge series name

Gauge pattern	Thickness of applicable specimen (mm)	Type	Gauge size(mm) Length	Gauge size(mm) Width	Backing size(mm) Length	Backing size(mm) Width	Backing size(mm) Thickness	Resistance Ω
	Approx. 5 or less	DD-1-15	3	2.9	15	7	1	350
	Approx. 5 to 10	DD-2-30	3	2.9	30	7	2	350

These strain gauges are not self-temperature-compensated. It may be necessary to measure a thermal output using a dummy specimen prior to the measurement.
Minimum order quantity is 5 strain gauges.