

DSS-01 Dielectric Strain Sensor

Basic characteristic

- ▲ DSS-01 is a dielectric strain sensor based on a composite material with a high flexibility body adaptable to most surface curvatures. The sensor has excellent dimensions possible to adjust for certain and challenging shapes.



Benefits

- ▲ One-body design for both strain and temperature measurement.
- ▲ Surface-mountable using direct gluing to the surface.
- ▲ No need for adjusting pre-strain during installation.

Applications

- ▲ Strain changes detection
- ▲ Composite deformations, etc...
- ▲ It can be mounted on different surfaces including pipelines, tanks, etc.
- ▲ Any curved objects.

Performance properties

Strain range	±2500μ ϵ
Accuracy (guaranteed) ¹⁾	<0.5% FS ³⁾
Accuracy (typical) ¹⁾	<0.23% FS ³⁾
Precision (guaranteed) ²⁾	<0.25% FS ³⁾
Precision (typical) ²⁾	<0.15% FS ³⁾
Temperature compensation	Integrated
Temperature accuracy ¹⁾	<1°C
Temperature precision ²⁾	±0.3°C
Temperature sensitivity	28pm/°C
Strain sensitivity	1.2pm/μ ϵ
Operating Temperature range	-20°C to +60°C
Ingress Protection rating	IP66

¹⁾ Accuracy is established for each sensor under laboratory conditions and it includes hysteresis, non-linearity, and repeatability of the sensor.

²⁾ Precision is established on a batch basis and it includes hysteresis, non-linearity, repeatability, and reproducibility of the sensor.

³⁾ FS: full-scale range

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Physical properties

Housing material	0.5mm thick GFRP
Anchoring distance	n/a
Dimensions (without cable) ¹⁾	Variable length (min 50mm) x 15 x 0.5 mm
Weight (without cable)	Around 30g per FBG
Cable type	900µm PTFE/PEEK / 3mm Dyneema reinforced tubing
Cable length ²⁾	1mtr
Cable Bend Radius (dynamic)	20mm
Cable Bend Radius (static)	10mm
Connector type ³⁾	FC/APC
Mounting method	Glue

¹⁾ For further dimensions, see the product drawing

²⁾ Cable length is extendable on request

³⁾ Other connector types available on request

Packaging

Cardboard box with dimensions: 370x290x45mm¹⁾

Quality statement

DSS-01 sensor is compliant with IEC 61757-1-1:2016/Ed1.0 and IEC 61757:2018

All sensors are 100% tested and calibrated at SYLEX

The sensor is manufactured according to ISO 9001:2015 and ISO 14001:2015

Optional accessories

- ▲ **WCP-01 Watertight connector protection** – used for FC/APC connector protection during the installation against dust and water – IP67 rated.
- ▲ **LCP-03 Longer cable pigtails** – used to extend the cable lengths from 1mtr up to 20mtr.

For more information contact our sales team at sales@sylex.sk

* Specifications are subject to change without notice