

MSA-01 Mountable strain array sensor

Basic characteristic

- ▲ MSA-01 is a strain array sensor with variable number of FBG sensors (min = 1, max = custom) and various gauge lengths.



Benefits

- ▲ **INSTALLATION:** Embeddable or Surface-mountable.
- ▲ Effectively replacing numbers of individual sensors with multiple gauges in a one-cable-array design.
- ▲ Fully customizable in the number of gauges and their lengths.

Applications

- ▲ Strain profile in concrete and metal structures
- ▲ Borehole deformation

Performance properties

Strain range	±2500µε
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	External
Strain sensitivity	1.2pm/µε
Operating Temperature range	-20°C to +60°C
Ingress Protection rating	IP 67

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	Stainless steel SS316 and PE
Anchoring distance	Adjustable parameter
Number of measuring sections	Up to 10
Dimensions (without cable) ¹⁾	Ø12 mm x L mm [Washer Ø24 mm]
Weight (without cable)	83g
Cable type	3mm Dyneema reinforced cable
Cable length ²⁾	1mtr
Cable Bend Radius (dynamic)	40mm
Cable Bend Radius (static)	30mm
Connector type ³⁾	FC/APC
Installation method	Mounting brackets

¹⁾ For further dimensions details see the product drawing

²⁾ Cable length is extendable on request

³⁾ Other connector types available on request

Packaging

Cardboard box

Quality statement

All sensors are 100% tested and calibrated at SYLEX
 The sensor is manufactured according to ISO 9001:2008 and ISO 14001:2004
 The sensor is compliant with IEC 61757-1-1:2020/Ed1.0 and IEC 61757:2018

Optional accessories

- ▲ **MBS-01 Mounting brackets** – used for sensor mounting to the measured object. Brackets can be screwed, glued, or welded to the surface.
- ▲ **WCP-01 Watertight connector protection** – used for FC/APC connector protection during the installation against dust and water – IP67 rated.
- ▲ **LCP-03 Longer cable pigtailed** – used to extend the cable lengths from 1m up to 20m.

Application note

MSA-01 with 1mm outer diameter needs approximately 30N per 1000µε and since the strain transfer is generated directly from the anchor points, a wavelength shift of 1,2pm will result in 1 µε. The relationship between the length change and wavelength shift is linear, however, we recommend using the equation with coefficients from the calibration sheet.

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

* Specifications are subject to change without notice