

ESA-01 Embeddable strain array sensor

Basic characteristic

- ▲ ESA-01 is an embeddable sensor array with variable number of FBG sensors (min = 1, max = custom) directly embeddable into concrete.
- ▲ ESA-01 offers measuring of strain changes in $\mu\epsilon$ or μm units between its own anchoring points.
- ▲ ESA-01 can be connected in series configuration.



Benefits

- ▲ Directly embeddable strain sensor.
- ▲ Integrated pre-strain, no further setup required.

Applications

- ▲ Strain measurement inside concrete structures.
- ▲ Combined with TP-02 temperature sensor the ESA-01 offers temperature compensated strain monitoring.

Performance properties

Strain range ¹⁾	$\pm 2000\mu\epsilon$	[+/-80 μm or 0-160 μm]
Accuracy (guaranteed) ²⁾	<0.50% FS ⁴⁾	<2 μm
Accuracy (typical) ²⁾	<0.23% FS ⁴⁾	<1 μm
Precision (guaranteed) ³⁾	<0.25% FS ⁴⁾	<1 μm
Precision (typical) ³⁾	<0.15% FS ⁴⁾	<0.6 μm
Temperature compensation	External	
Operating Temperature range	-20°C to +60°C	
Ingress Protection rating	IP 67	

¹⁾ Calibrated in μm on demand

²⁾ Accuracy is established for each individual sensor under laboratory conditions and it includes hysteresis, non-linearity and repeatability of the sensor.

³⁾ Precision is established on a batch basis and it includes hysteresis, non-linearity, repeatability and reproducibility of the sensor.

⁴⁾ FS: full scale range

ESA-01 Embeddable strain array sensor

Physical properties

Housing material	Stainless steel SS316 and POM-C
Anchoring distance	134mm
Dimensions (without cable) ¹⁾	Ø35mm x 176mm
Weight (without cable)	95g
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	Embedding

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
 Sensor is manufactured according to ISO 9001:2008 and ISO 14001:2004
 Sensor is compliant with IEC 61757-1-1:2016/Ed1.0 and IEC 61757:2018

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