

## ES-03 Embeddable strain sensor

### Basic characteristic

- ▲ ES-03 is a directly embeddable strain sensor without requiring any further supportive elements.
- ▲ ES-03 offers to measure strain changes in  $\mu\epsilon$  or  $\mu\text{m}$  units between its anchoring points.
- ▲ ES-03 can be connected in a series configuration.



### Benefits

- ▲ Directly embeddable strain sensor without requiring any further supportive elements.
- ▲ Integrated pre-strain requires no further setup.
- ▲ Strain measurement inside concrete structures.
- ▲ Combined with the TP-03 temperature sensor the ES-03 offers temperature compensated strain monitoring.

### Applications

#### Performance properties

Strain range <sup>1)</sup>	$\pm 5000\mu\epsilon$	[+/-500 $\mu\text{m}$ or 0-1000 $\mu\text{m}$ ]
Accuracy (guaranteed) <sup>2)</sup>	<0.50% FS <sup>4)</sup>	<5 $\mu\text{m}$
Accuracy (typical) <sup>2)</sup>	<0.23% FS <sup>4)</sup>	<3 $\mu\text{m}$
Precision (guaranteed) <sup>3)</sup>	<0.25% FS <sup>4)</sup>	<3 $\mu\text{m}$
Precision (typical) <sup>3)</sup>	<0.15% FS <sup>4)</sup>	<1.5 $\mu\text{m}$
Strain sensitivity	1.2 $\text{pm}/\mu\epsilon$	12 $\text{pm}/\mu\text{m}$
Temperature compensation		External
Operating Temperature range		-20°C to +60°C
Ingress Protection rating		IP 67

<sup>1)</sup> Calibrated in  $\mu\text{m}$  on demand

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

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

<sup>4)</sup> FS: full-scale range

## ES-03 Embeddable strain sensor

### Physical properties

Housing material	Stainless steel SS316L/SS304
Anchoring distance	~110mm
Dimensions (without cable) <sup>1)</sup>	Ø34mm x 174mm
Weight (without cable)	260g
Cable type	3mm Dyneema reinforced cable
Cable length <sup>2)</sup>	1mtr
Cable Bend Radius (dynamic)	40mm
Cable Bend Radius (static)	30mm
Connector type <sup>3)</sup>	FC/APC
Mounting method	Embedding

<sup>1)</sup> For further dimensions details see the product drawing

<sup>2)</sup> Cable length is extendable on request

<sup>3)</sup> Other connector types available on request

### Packaging

Cardboard box with dimensions: 370x290x45mm

### Quality statement

ES-03 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 9001:2008 and ISO 14001:2004

### 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](mailto:sales@sylex.sk)

\* Specifications are subject to change without notice