

Embeddable Strain Sensor ES-01

Description

The embeddable strain sensor ES-01 is a strain sensor that is intended to become embedded into concrete structures in order to measure the strain variations between its anchoring points. The fiber is fixed inside a ruggedized housing and has a connector at both ends in order to make series configurations possible.



Features

- Detection of strain with sub-microstrain precision
- Sensors can be placed in series and hereby reducing the cabling to a minimum
- Ruggedized housing that can be directly embedded into a concrete structure
- Direct measurement of the strain, both tension as well as compression
- The displacement can be derived from the distance between the anchoring points.

Applications

The Embeddable Strain sensor ES-01 can be applied for the detection of strain changes in concrete structures due to e.g. varying load conditions or crack and fissure formation. The sensor contains a certain amount of pre-tension in order to monitor besides elongation also compression. When temperature variations are expected, a temperature sensor is recommended for compensation purposes.

Standard specifications

Parameter	Value
Strain resolution ¹	0.25 $\mu\epsilon$
Strain precision ¹	0.5 $\mu\epsilon$
Strain range	-560 $\mu\epsilon$ to 560 $\mu\epsilon$
Temperature range ²	-20 °C to +60 °C
Housing material	SS316
Housing dimensions	Ø35 mm x 142 mm
Distance between anchoring points	134 mm
Pigtail diameter	3 mm
Pigtail length ²	1.5 m
Pigtail material	LDPE
Connector type	FC/APC
Water tightness ³	IP68

¹ Taking into account a depolarized measurement device with a 1 pm wavelength resolution and precision.

² Extendable on request.

³ Watertight at 10 bar for 12 hours.

Ordering information

Example:

E S 0 1 - 0 9 - 0 0 - F A - 0 0 - F A

Product	
ES-01	Embeddable Strain

Nominal wavelength	
Standard	
01	1510 nm
02	1515 nm
03	1520 nm
04	1525 nm
05	1530 nm
06	1535 nm
07	1540 nm
08	1545 nm
09	1550 nm
10	1555 nm
11	1560 nm
12	1565 nm
13	1570 nm
14	1575 nm
15	1580 nm
16	1585 nm
Custom Contact sales department	

Connector type left	
Standard:	
FA	FC/APC
Custom: Contact sales department	

Connector type right	
Standard:	
FA	FC/APC
Custom: Contact sales department	

Pigtail length left	
Standard:	
00	1.5 m
Custom: length in XX meters	

Pigtail length right	
Standard:	
00	1.5 m
Custom: length in XX meters	

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