

Anchor Strain Chain ASC-01

Description

The fibre optic anchor strain chain ASC-01 contains different strain segments in series. The sensor configuration has a small diameter and is designed to become embedded inside structures (e.g. concrete, grout, plaster, ...). Each strain segment contains 1 FBG in between two anchor points. A relative displacement between the two anchor points is transferred into a change in the strain state of the FBG. The standard length of a segment can be chosen between 0.5 and 5 meters. The sensor can be connectorised at both ends to make series configurations possible.

Features

- Detection of strain changes over base lengths up to 5 meters.
- The FBG is an ORMOCER-coated Draw Tower Grating (DTG) which ensures high strength
- Temperature cross-sensitive: when large temperature variations are expected, a temperature sensor is recommended for compensation purposes.

Applications

Monitoring reinforcement anchor bars, monitoring of walls, ...

Standard specifications

Parameter	Unit	Value
Strain gage factor (S_ϵ)	$\mu\epsilon^{-1}$	7.77×10^{-7} (typical)
Relative statistical error on S_ϵ	%	0.5
Strain range	%	0.5
Temperature range	$^\circ\text{C}$	-10 to +60
Temperature cross-sensitivity ¹	pm/ $^\circ\text{C}$	10 (typical)
FBG wavelength	nm	1510 to 1590
Segment length	m	0.5 to 5
Number of segments	-	Up to 10
Chain diameter	mm	3
Fixation	-	Anchor embedding
Chain tube material	-	Polyamide
Anchor material	-	SS316
Pigtail diameter	mm	3
Pigtail length ²	m	1.5
Pigtail material	-	LDPE
Connector type	-	FC/APC

¹The intrinsic temperature sensitivity of the FBG; does not include the thermal expansion of the structure to which the sensor is attached.

² Extended on request.

Ordering information

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