FBG Strain Sensor

Description

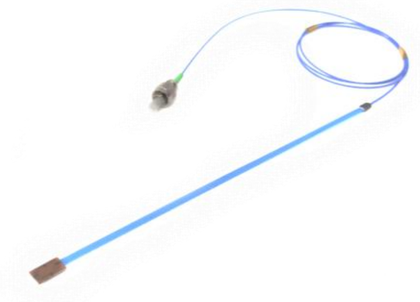
FBG strain sensor is a strain measurement sensor based on fiber Bragg grating. It can monitor the strain value of the measured object by measuring the spectral shifts of FBG.

Applications

- Suitable for application scenarios where traditional resistance strain gauges used
- Suitable for application scenarios where traditional surface-mounted resistance strain gauges used
- Suitable for harsh environments with the requirements of high anti-electromagnetic interference and explosion-proof

Features

- Gauge length the same as standard resistance strain gauges
- Passive and free from electromagnetic interference
- High networking with series or parallel connected
- Lifespan >10^7 cycles (±1500με)
- High stability, no zero-point drift



Specification

Strain	Unit	Specification
Gauge Length	mm	3
Strain Sensitivity k_ε	pm/uε	~1.3
Strain Range	uε	±3000
Linearity	%	99.9
Temperature Range	℃	-40~+85
Temperature	**Unit**	**Specification**
Temperature Sensitivity k_T	pm/℃	~28
Temperature Range	℃	-40~+85
Optics	**Unit**	**Specification**
Central Wavelength	nm	1510-1590

T&S Headquarter
8 Jinxiu Middle Road, Pingshan, Shenzhen,
Guangdong, 518118, China
0755-32983688 | info@china-tscom.com | www.china-tscom.com

Reflectivity	%	⩾10
SMSR	dB	⩾15
Machinery	**Unit**	**Specification**
Dimension	L(mm)×W(mm) ×T(mm)	~19×7×0.7
Connector Type	-	FC/SC/LC/MT
Pigtail Length	m	1.0
Fiber Bending Radius	mm	10
Pigtail Protection Type	-	Optical fiber ribbon +0.9mm tube
Reliability	-	**Conform to GR-1221-Core**

Microstrain (με) Calculation Formula:

$$\mu\varepsilon = \frac{\lambda_\varepsilon - \lambda_1}{k_\varepsilon} \times 10^3 - (26.0 + \Delta) \times (T_\varepsilon - T_1)$$

where,

λ_1: Wavelength after the strain gauge is installed when the ambient temperature is T_1 (°C), unit: nm.

λ_ε: The wavelength after the strain gauge is installed under load and the ambient temperature is T_ε (°C), unit: nm.

Δ: The difference in linear expansion coefficient between the material under test and the base material of the strain gauge, the specific expression is: $\Delta = \alpha - 18.4 \times 10^{-6}) \times 10^6$, where, α is the linear expansion coefficient of the material under test, unit: /°C.