



Standard FRP Strain and Temperature SmartPatch

Key Features

- FBG Strain and/or Temperature Sensor
- Sensor Embedded within Protective Laminate
- Zero Power, EMI Immune, Intrinsically Safe
- Developed by Smart Fibres for Surface Bonding to Metal, Concrete, Composite, etc.
- Installations Include Wind Turbine, Ship Hulls, Yacht Masts and Concrete Civil Structures
- Suitable for Long-Term SHM
- Multiple km Signal Integrity

About SmartPatch

SmartPatch is a robust and easy to handle FBG strain sensor in which the FBG is embedded within a flexible fibre reinforced polymer patch. It can be easily bonded to most substrate materials including metals, composites and concrete. SmartPatch can be supplied into many forms: as a single axis strain sensor, a multi-axis rosette, or as an array of multiple sensor configurations. Inbuilt temperature compensation is available when requested. Applications include surface strain sensing on wind and tidal turbine blades, or concrete civil structures.

Specifications

Parameter	Standard	Options*
Patch Dimensions	120 x 20 mm (strain only) 140 x 20 mm (strain and temperature terminal) 250 x 50 mm (strain and temperature in-line)	Smaller dimensions
Gauge Length (approx.)	6 mm	As required with patch length
Strain Range	± 5,000 µstrain (± 4,000 µstrain for LGL option)	> ± 9,000 µstrain (SGL only)
Strain Sensitivity	1.2 pm/µstrain	
Strain Resolution†	0.4 µstrain	
Temperature Range	-30 to +60 °C	
Temperature Sensitivity	11 pm/°C	
Temperature Resolution†	0.05 °C	
Fibre Type	Single Mode SMF-28, 9/125 µm	

Typical FBG Type	CWL 1510 to 1590 nm, FWHM ~0.7 nm R > 70 %, Apodised profile, SLSR > 15dB	Alternative CWL or spectral profile
Cable and Connections	To suit application	

[†] with 0.5 pm resolution interrogator
^{*} custom SmartPatch available on request for volume applications

Specifications may change without notice