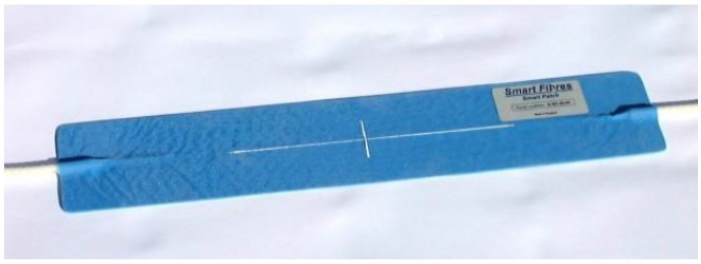
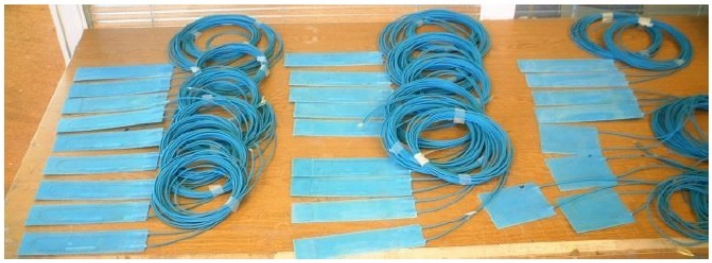
SmartPatch

Surface Mount FBG Sensor

- **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**



Standard FRP Strain SmartPatch



SmartPatch in Production

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.

SmartPatch Specifications (typ):

	Unit	Standard	Options*
Patch dimensions	mm	120 x 20 (strain only) 140 x 20 (stain and temperature terminal) 250 x 50 (strain and temperature in-line)	Smaller dimensions
Gauge length (approx)	mm	6	As required within patch length
Strain range	µstrain	+/- 5,000 (+/- 4,000 for LGL option)	> +/- 9,000 (SGL only)
Strain sensitivity	pm/µstrain	1.20	
Strain resolution†	µstrain	0.4	
Temperature range	°C	-30 to +60	
Temperature sensitivity	pm/°C	11	
Temperature resolution†	°C	0.05	
Fibre type		Single Mode SMF-28, 9/125 µm	
Typical FBG type		CWL 1510 – 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

All specifications are correct at the time of writing and may change without notice.
Certain specifications may be speculative or untested - please contact us to confirm the specification meets with your requirements.

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