

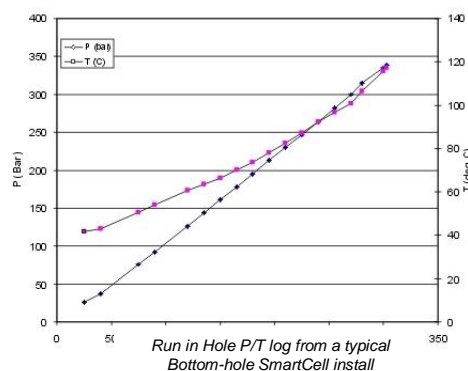


- Stable FBG P&T gauge
- No downhole electronics
- Long life at elevated temperature
- Low cost

SmartCell is a fibre Bragg grating based sensor that can measure highly varying pressure and temperature excursions in hydrocarbon wells. Numerous SmartCell sensors can be connected on a single optical fibre cable and interrogated with a topside instrument. The instrument can be located remote from the wellhead, and simultaneously monitor SmartCell chains deployed in numerous wells, providing for a highly cost effective tool for intelligent reservoir management and optimisation. For more information about SmartCell and Distributed P/T Sensing, visit [www.smartfibres.com/SmartCell\\_DPTS.htm](http://www.smartfibres.com/SmartCell_DPTS.htm)

Whilst its multi-drop capability is one of SmartCell's key benefits, for some applications a single bottom-hole measurement of pressure and temperature is all that is required. For these applications we offer our Bottom-hole SmartCell gauge with the benefit of an all-welded construction and no downhole electronics and, therefore, significantly increased lifetime at elevated temperatures.

SmartCell is configured to measure annulus pressure, and so is simply deployed by attaching the gauge to the tubing string or tailpipe using a standard, low-cost cable protector. Connection of the Bottom-hole SmartCell to the downhole cable can be made, for example, using a [SmartLink](#) splice or connector system.



## Specifications

Parameter	Bottom-hole SmartCell Capability
Pressure Measurement	Annulus
Working Pressure Range (psi / bar)	Atmospheric to 5,000 / 350
Overload Pressure	150 %FS
Working Temperature Range (°F / °C)	0 to 300 / -20 to 150 (> 300 / 150 to follow)
Pressure Accuracy <sup>1</sup>	0.1 %FS
Pressure Resolution	0.05 %FS
Temperature Accuracy (°F / °C)	0.2 / 0.1
Temperature Resolution (°F / °C)	0.002 / 0.001
Pressure Measurement Stability <sup>2</sup>	± 0.05 %FS/year
Sealing	All laser welded assembly
Dimensions (in/mm)	2.4 x 2.1 x 0.7 / 61 x 54 x 18
Gauge Material	Inconel 718
Service	H <sub>2</sub> S in accordance with ISO 15156

1. As calibrated, over all pressure and temperature range, expressed as one standard deviation of the absolute errors.

2. Stability at 80% FSD pressure and 60 degC over 1 year, expressed as one standard deviation. No long-term trend visible in stability test data.

Smart Fibres maintains a policy of continuous improvement so specifications may change without notice.

For applications up to 5,000 psi where multi-drop annulus P/T measurements are required please refer to our [Downhole SmartCell](#) datasheet.

For applications above 5,000 psi, or for tubing pressure measurements, please refer to our [SmartPort](#) datasheet.