



A: Pressure housing
B: Input cable from well
C: Output fibres to surface instrument
D: Pressure seal around fibres

- **Surface Pressure Barrier**
- **Ensures well integrity for downhole optical monitoring installations**
- **Supports multiple fibre counts and fibre types**
- **High Pressure Rating**

A downhole optical sensing installation typically involves a multi-fibre cable which provides communication from the downhole gauges to the surface instrumentation. Such cable is normally of a fibre in metal tube (FIMT) construction, where the outer diameter is a ¼” steel tube. Sealing of this ¼” tube as it passes through downhole packers, tubing hangers and the like can be readily and reliably done using industry standard compression fittings.

However, there sometimes remains a concern as to whether well fluids may have opportunity to escape to surface through the inside of the FIMT in the case of a compromise of the tube integrity downhole. Whilst the FIMT offers a gel filling around the fibres which significantly reduces the likelihood of such a leak to surface, SmartPB is offered as a surface pressure barrier to provide absolute certainty of well integrity.

SmartPB comprises a pressure tight housing (A) within which spliced or connectorised joining of the fibres from the downhole cable (B) to the surface fibres (C) can be made. A pressure barrier (D) is made around the surface fibres so that, in the event that well fluids reach the surface through cable (B), they are contained within housing (A). Optionally, a pressure gauge is provided as a visual indication that the housing has been pressurised.

SmartPB Specifications (typ):

Dimensions	7.87 x 5.90 x 1.42 “ / 200 x 150 x 36 mm
Weight	18.7 lb / 8.5 Kg
Housing Material	SS 316
Sealing Material	Fibre seal – Epoxy Lid seal – Viton Cable seal – Metal to metal compression
Operating Temperature	-40 to +85°C / -40 to 185°F
Rated Pressure	3000 psi at 20°C / 2000 psi at 85°C

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