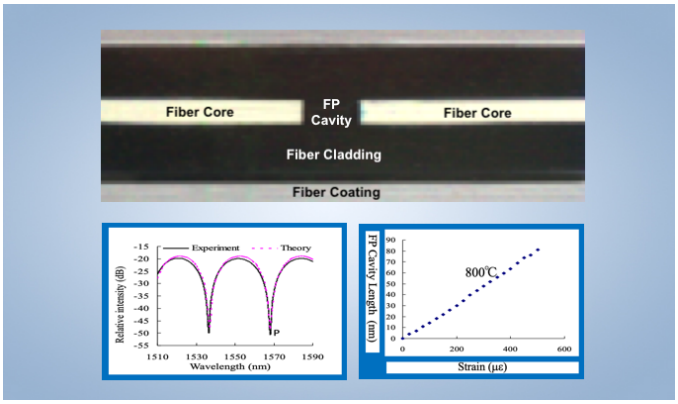
TFP10 / Micro Fabry-Perot Strain Sensor to 700°C

Description

The TFP10 is an All-Fiber Micro Fabry-Perot (uFP) Sensor for use in applications to 700 Degrees Celsius. Using laser micro-machining technology, the Fabry-Perot sensing element is hermetically embedded in the core of the host single-mode optical fiber. The advanced design yields an all-fiber, ultra-compact, very-sensitive, and high-accuracy sensor ideally suited for precise strain or pressure measurements to 700°C.

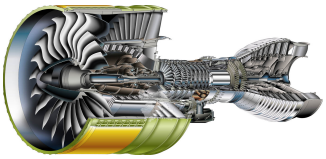
The TFP10 Micro Fabry-Perot Sensors deliver the many advantages inherent to all optical devices and are mutually complementary with Fiber Bragg Grating (FBG) based sensors in terms of fiber type and working temperature range. The sensors have been applied to a large number of tests and measurements in the field and are reported to be uniquely positioned among the best fiberoptic high temperature sensors available today.

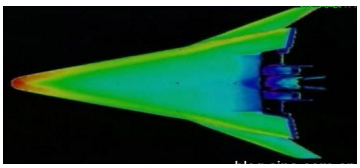


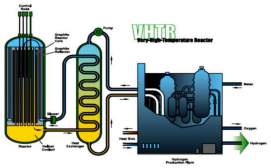
Key Features

New Measurements Enabling Technology. The TFP10 uFP sensor exhibits one Fabry-Perot spectral peak or valley typically centered in the middle of the C-Band, around 1550nm. The sensor is terminated with single-mode (SM) fiber for easily interfacing to optical test instruments or to other optical components. The ultimate precision hermetic packaging (the fiber is the package) of the TFP10 yields excellent wavelength to temperature, wavelength to strain, and wavelength to pressure measurements repeatability with stable operation for long-term use. Single-ended, all-fiber.

Field Proven and easy to install: The TFP10 sensors have been successfully deployed in field installations to monitor engines, aircraft sub-systems, and nuclear stations and provide game changing advantages over other sensing alternatives for these and many other commercial applications, industrial processes, and for research laboratories worldwide. The TFP10 uFP Sensors have been in production for several years and continue to receive excellent customer feedback. The TFP10 is a rugged and sensibly priced ultra-small sized sensor enabling precision measurements in places and applications that were physically unreachable before.







Parameter	Specifications
Wavelengths	1530nm to 1570nm, other options
FFP Cavity, FSR, Fringe Contrast Options	50+/-5um, 15-18nm, >=5dB 40+/-5um, 18-23nm, >=7dB 30+/-5um, 23-33nm, >=10dB 20+/-5um, 33-55nm, >=15dB
Operating Temperature	-100°C to 700°C
Strain Range	1000με
Strain Sensitivity	0.1με
Strain Stability	+/-0.1με
Strain Accuracy	Measurement Instrument Absolute Precision and Repeatability Dependent
Pressure Range	1-60MPa
Response Time	Ultrafast and limited only by the Measurement Instrument's Capability
Fiber, Core/Clad Diameter	Single-ended sensor with SMF28e, 9/125um pigtail
Pigtail Termination	1m +/- 0.1m
Fiber Bend Radius	>17mm
Optical Connectors	FC/APC, LC/APC, other options available

Applications in Jet Engines, Aerospace, Nuclear, Industrial Processes, and Research

Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

Technica Optical Components / 3657 Peachtree Rd, Suite 10A, Atlanta, 30319, USA, info@technicasa.com, www.technicasa.com