T620 / Pore Water Pressure Sensor

Description

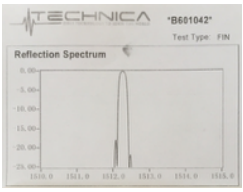
The T620 is a High-Accuracy and Sensitivity Single-Mode Fiber (SM) based Fiber Bragg Grating (FBG) based Packaged Pore Water Pressure Sensor for operation to 150 psi.

Available in a wide range of optical specifications. Packaged with two internal FBGs to eliminate influences from the ambient environment, the novel transducer mechanism yields a high sensitivity and absolute accuracy optical sensor. Ready for direct use in many applications. Calibration service available upon request. The T620 sensor handling and installation is fast, easy and intuitive. Delivers the advantages inherent to FBG sensors.

The T620 series Pressure Sensors are fabricated using licensed and proprietary state-of-the-art laser manufacturing technologies and product designs. The pressure sensor configuration specified herein is the most common configuration. Other pressure ranges, sensitivities, resolutions, and form-factors are possible and can be customized under contract.

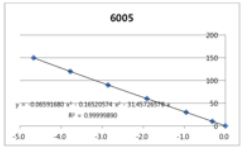
Manufactured and sold by Technica under International Licenses from United Technologies Corporation, Inc and EJTECH Corporation.

Key Features



Accurate measurements to 150 psi. The T620 uses ultra-precision made FBGs written into the fibers' core and a novel packaging architecture for producing a transducer configuration that enables measurements to 150 psi without loss of sensitivity or accuracy.

Self-Temperature compensation. Each T620 pressure sensor includes two internal FBGs and is self-temperature compensated for true plug and play operation in the field.



Excellent linearity. The proven opto-mechanical architecture of the T620 and the advanced fiber to steel bonding techniques used in producing this sensor yield a simple transducer configuration with both high linearity and repeatability.

Ready to be daisy chained. Well suited for projects that include the need to monitor pressures at one or many locations. Provided as double-ended connectorized sensors or in ready to install arrays of various lengths and with a flexible number of sensors. Available with up to 30 pressure sensors per sensing array. Typical arrays include daisy chaining with other sensors including T210-215 vibration, T220-240 surface and embedded strain, T310-330 acceleration, T510-520 tilt, and other FBG sensors.

Reliability by design. Ruggedized for demanding projects requiring field proven technologies that yield accurate and stable operation for the long-term. Designed by Civil Engineers for Civil engineering applications.

Parameter	Specifications
Wavelengths and Tolerance	1459 to 1621 nm, +/-0.5 nm; other options
Reflection BW (FWHM)	0.25 nm, other options
Reflectivity %	75%, other options
SLSR	>15 dB, other options
Pressure Range	0 - 150 psi
Accuracy	0.1% full scale
Resolution	0.01% full scale
Sensitivity	> 0.004 psi
Temperature Range	-20°C to +80°C
Humidity Range (operation environment)	0 - 95% Relative Humidity
Array Configuration	Up to 30 sensors / fiber
Sensor Pigtail (Length, DIA)	1 m, 3mm; other options
Optical Connector	FC/APC, or custom
Housing Material	Steel
Dimensions, Weight	130 grams

Applications in Civil Engineering, Geotechnical, Energy, and R&D Monitoring

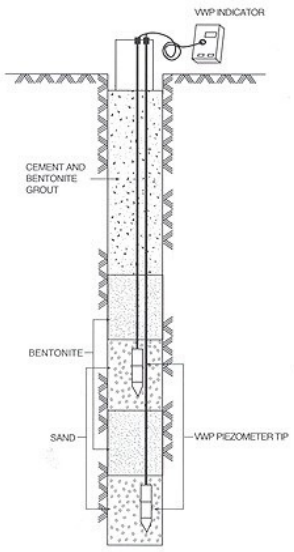
Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

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

T620 / Pore Water Pressure Sensor Calibration / Installation

Sensor Installation:

The typical installation of the T620 FBG Pore Water Pressure Sensors is shown below. Under normal circumstances the sensors installation does not require the use of any specialized jigs or tools.



Pressure Calibration:

Each Pore Water Pressure Sensor can be optionally factory calibrated over its entire measurement range from 0 to 150 psi. In that case, it is provided with a T620 Calibration Certificate.

Calibration Station:

T620 Pressure Sensor Dimensions:

It should be noted that while most often the customers' application related physical requirements can be met by our standard pressure sensor configuration, the internal transducer mechanism can be adapted to yield dramatic changes in measurable pressure levels, outside sensor dimensions, and to pass various levels of ruggedization to meet and exceed even the most demanding installation requirements. The T620 sensor is ROHS, REACH, CE, ATEX compliant.

Customer specific sensor tests:

Application specific customized testing can be performed upon request. Engineering lab service charges may apply. Custom work requires a Scope of Work document and a mutually agreed upon project timeline.

Applications in Civil Engineering, Geotechnical, Energy, and R&D Monitoring

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