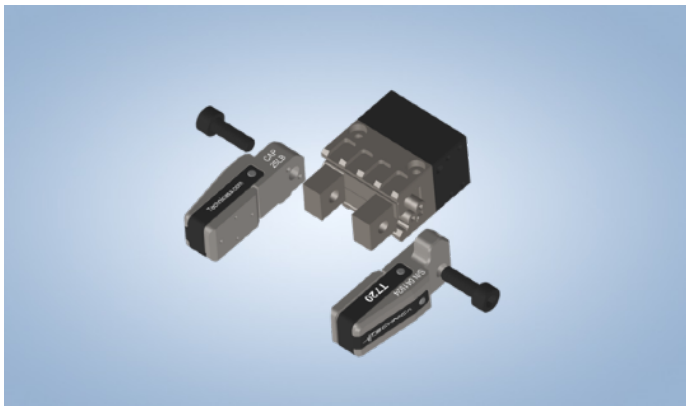
T720 / Load Cell Gripper

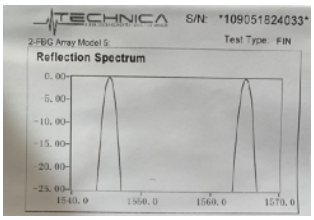
Description

The T720 is a Single-Mode Fiber (SMF) based Fiber Bragg Grating (FBG) Load Cell Gripper, a self-temperature compensated Force Sensor for -55°C to +200°C environments.

Ready for direct mounting and exhibiting excellent wavelength to load linearity. Self-temperature compensated. Calibration service available upon request. The full-scale (FS) accuracy and precision specifications take into account any hysteresis, non-linearities, and the repeatability of the sensor. The T720 sensor handling and installation is fast, easy and intuitive. Delivers the advantages inherent to FBG based sensors. Immune to lightning and electromagnetic interference (EMI). The T720 series Load Cell Grippers are fabricated using licensed and proprietary state-of-the-art laser manufacturing technologies.



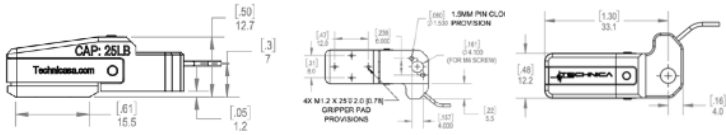
Key Features



Wide Sensing Envelope: The T720 tactile sensor is designed with a generous 15.5 mm wide active sensing surface.

Optimized for full coverage across the length of the robotic finger. This wide tactile zone ensures accurate force readings not only at the center but also at the edges, providing comprehensive sensing even during off-axis or unbalanced grasps. The T720's intelligent transducer structure offers effective off-center load cancellation, enabling robots to adapt to a wide range of object shapes and orientations without sacrificing measurement accuracy.

High Accuracy and Extreme Temperature Resilience. Rated for the capacity of 25lb, the T720 optical finger force sensor delivers outstanding measurement precision tailored for high-performance robotic applications. Utilizing dual Fiber Bragg Grating (FBG) technology, the T720 provides a high-resolution signal output of 3500 με at full scale, allowing it to capture subtle force variations with exceptional clarity. Its non-linearity is kept below 0.5% of Rated Output (R.O.), ensuring consistent and reliable results across the entire force range. Engineered to perform reliably in harsh environments and in a wide range of temperatures, this self-temperature compensated sensor boasts a high operating temperature rating of up to +200°C, making it ideal for demanding industrial, aerospace, and automotive applications. It offers outstanding thermal stability with temperature shift in zero and span both maintained below 0.005% of Rated Output per °C (R.O./°C). This ensures minimal signal drift and exceptional measurement consistency, even under rapid or sustained temperature fluctuations.



Parameter	Specifications
Maximum Load	25lb, other options
Load Accuracy / Non-Linearity	< 0.5% of Rated Output
Temperature Compensation	Twin FBG Architecture
Thermal Stability	< 0.005% RO/°C
Wavelengths / Tolerance	1460 to 1620 nm, +/-1 nm;
Reflection BW (FWHM)	1.0nm, other options
Reflectivity %	>25%, other options
FBG Length	2 mm, other options
SLSR	10 dB, other options
Response Time	1 ms
Operating Temperature	-55°C to +200°C
Fiber Type and Diameter	Single-Mode with 9/125/155um core/clad/coat
Fiber Coating	Polyimide, other options
Material, Dimensions	Stainless Steel, see Dwgs.
Sensor Configurations	Single-Ended, or Double-Ended
Fiber Pigtail Protection	1 mm OD Non-Fray Varglas
Fiber Pigtail Length	1 m, other options
Fiber Bend Radius	> 17 mm, other options
Optical Connector	FC/APC, other options

Applications in Robotics, Industrial, Aviation, Energy, and Research and Development

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.

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