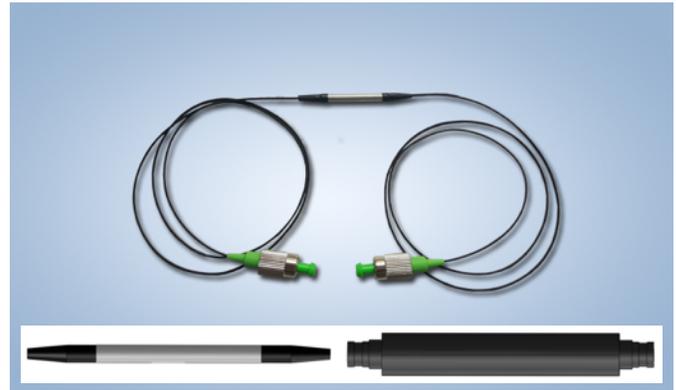


Description

The T840 is a rugged high-accuracy single-mode (SM) fiber based Fiber Bragg Grating (FBG) Absolute Temperature Sensor for use in harsh environments from -40°C to +150°C.

Available in a wide range of optical specifications. Packaged to eliminate strain and other influences from the ambient environment. The T840 sensor is the T830 packaged in various rugged skins and terminated with 3mm armored cables. The T840 is ready for surface mounting on flat or curved surfaces, or for embedding into concrete and other materials. Exhibiting excellent wavelength to temperature stability. Individual calibration certificates 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 T840 installation is fast, easy and intuitive. Delivers the advantages inherent to FBG sensors. Immune to EMI.

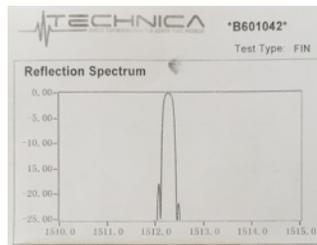
T840 series Temperature Sensors are fabricated using licensed and proprietary state-of-the-art laser manufacturing technologies and thermal designs. The sensor packaging described herein represents the most popular configuration and can be customized.



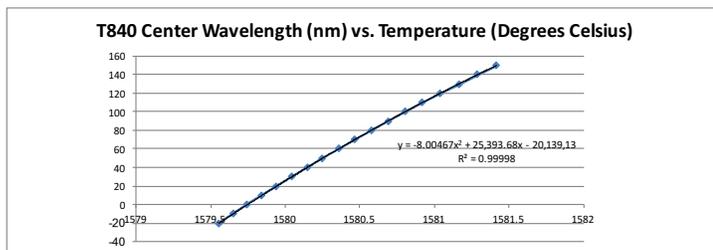
Manufactured and sold by Technica under International License from United Technologies Corporation, Inc.

Key Features

Temperature accuracy. The precision made FBG written into the fibers' core for producing the T840 and our state-of-the-art sensor packaging technology yields a simple transducer configuration of high resolution, high-accuracy and repeatability. Customer specified BW for clear signal processing.



Parameter	Specifications
Temperature Range	-40°C to +150°C
Temperature Accuracy	0.3% FS (0.15% FS typical)
Temperature Precision	0.1% FS
Resolution and Sensitivity	0.01°C, 10pm/°C
Wavelengths and Tolerance	1458nm to 1622nm, +/-0.5nm; 980, 1060, 1310nm, other
Bandwidth @3dB (FWHM)	0.1nm to 2.0nm; other opt.
Reflectivity %	50% std, 1% to 99% options
SLSR	>15dB, other options
Sensor Configurations	Single or in Arrays
Sensor Pigtail (L, DIA)	1 m, 3mm armored cable
Cable Bend Radius	15mm std, options to 5mm
Optical Connector	FC/APC, LC/APC, other
Housing Material	Stainless Steel 304, also available in SS316
Dimensions (L, DIA)	40.15mm x 3.2mm core + skin
Skins	Tube, Flat, Curved (see page 2)
Ingress Protection Rating	IP68



Available in standard or custom skins. Skin choices for the T840 sensor are described on page two of this product datasheet.

Available as single point sensor or can be multiplexed in-line with many other same or different type sensors. Well suited for projects that include the need to monitor temperature at key discrete locations, or can be provided in custom made arrays.

Low cost and long-term stability. The T840 is ideal for demanding projects that require both low-cost per temperature sensing point and stable operation over the long-term.

Applications in Civil and Geo Engineering, Energy, Transportation, Industrial, 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.

T840 Skin Options

At the core of every T840 sensor is a T830 sensor. The T840 design and the associated manufacturing technology process ruggedizes the T830 with professionally fitted industrial grade skins and 3mm armored cable pigtails to yield a high-accuracy absolute temperature sensor well fit for use in harsh environments.

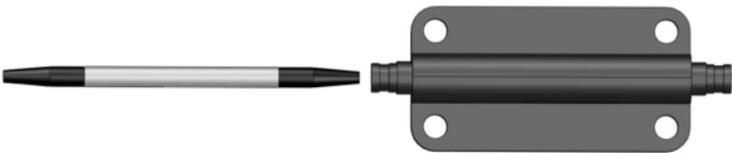
Option 1: Standard Skin

For use on many surfaces, can be laid in conduits, and can also be embedded in concrete and other materials.



Option 2: Wide Fin Skin

This version can be glued or screwed onto many flat surfaces.



Option 3: Narrow Fin Skin

This version can be glued or screwed onto many flat surfaces.



Option 4: Curved Skin

This version can be glued or screwed onto curved surfaces.



Options for Other Skins: While we currently provide the four standardized skin options on the left, many more skin designs are possible for various custom applications at little or no extra cost per each new skin design.

Minimum Order Quantity requirements apply for custom skin design requests.

Design Qualification is performed for new skin design requirements to ensure the continued integrity of the sensor. Heat transfer analysis is also performed for exotic new skin design requests that may interfere with the fiber and support structure materials that have been optimized to yield the premium performance characteristics available with our standard T840 skins.

Design Modifications are not limited only to the outer skin design and may include the type of fiber to be used, the internal Fiber Bragg Grating specifications, the low and high-temperature limit requirements, the type of pigtail cable material to be used, the lengths of the pigtails, and the types of optical connectors to be installed.

Advanced Manufacturing Technologies proprietary to Technica are used for device packaging and calibration. All skins are installed at the factory and cannot be safely removed or exchanged in the field. Tampering with the skin of a T840 sensor in order to remove it or modify it in the field may damage the integrity of the internal T830 opto-mechanical core.

Sensor Arrays based on the T840 can be specified with various lead-in and lead-out lengths, with equal or varying distances between sensors, and with virtually no limitation on the number of sensors within the array construction.

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