Temperature Compensation Sensor | os4100

Applications

- Use in Combination with an os3100 Optical Strain Gage for Accurate Temperature-Compensated Strain Measurements.
- Relative Temperature Sensor for Automotive, Aircraft/Aerospace, Rolling Stock, Vessels, Structural, Geotechnical, Energy and Medical Equipment Monitoring.

Features

- Remote Sensing Ability: Ideal for applications with long distances between sensors or between sensors and instrument.
- Easy to Install: Can be mounted directly to most materials via epoxy, screws or spot welding.
- Simple to Mutiplex: Easily facilitates multiple sensors on a single optical connection.
- Non-Electrical Sensor Design: Eliminates ESD and spark hazard, and immune to electromagnetic interference.
- Ideal for Harsh Environments: Small in size, no electromagnetic field generation by the sensor.

Description

The os4100 surface mounted Temperature Compensation Sensor is a revolutionary product based on Micron Optics' patented micro opto-mechanical technology. The os4100 provides an ideal alternative to electrical temperature sensors, featuring advantages such as high sensitivity, long-term stability, and premium performance under harsh environmental conditions. The os4100 builds on the same technology as the highly-reliable os3100 optical strain gage to ensure long-term stability by design, and it uses neither epoxies nor other glues as part of its structure.

Installation is easy as the os4100 can be spot-welded, epoxied or fastened with screws to most materials using conventional techniques. This sensor can be used alone or in series as part of an FBG sensor array.

The os4100 is an industrial grade design targeting the harsh environments found in Energy, Civil, Transportation, Aerospace and Military applications and demonstrates excellent compatibility with Micron Optics sensing instruments.

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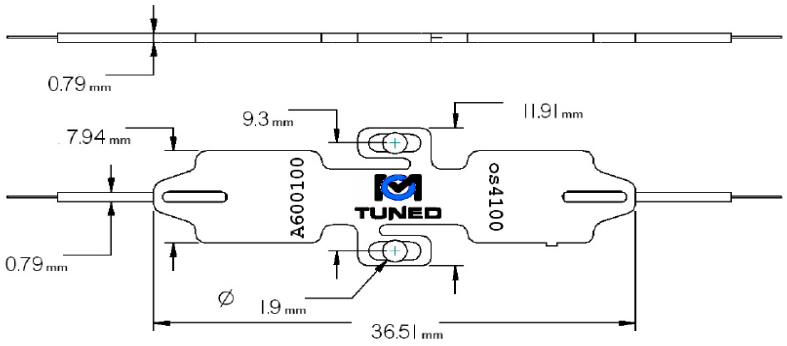
Specifications [1]	os4100
Thermal Properties	
Operating Temperature Range	-40 to 120°C (150°C short-term)
Cable Temperature Range	-40 to 150° C (Connectors: -40 to 80°C)
Temperature Sensitivity	~ 28.9 pm/°C (+/-0.5pm/°C)
Short-Term Repeatability [2]	± 0.75°C (±21 pm)
Drift [3]	± 1.0°C (±29 pm)
Physical Properties	
Dimensions	36 mm x 12 mm x 1 mm
Weight	3.0 g
Frame Material	302 Stainless
Cable Length	1 m (± 10 cm), each end
Fiber Type	SMF28-Compatible
Fiber Coating	Polyimide
Buffer Tube	0.9 mm Fiberglass Braid
Connectors	FC/APC optional
Cable Minimum Bend Radius	12 mm
Fastening Methods: Screws Spot Weld Epoxy	1-72 (M1.6) 50 joules max, mounting tabs only Mounting tabs only
Optical Properties	
Center Wavelength	1465 to 1617nm available (± 1 nm)
Peak Reflectivity (Rmax)	> 70%
FWHM (-3 dB point)	0.25 nm (± .05 nm; apodized grating)
Isolation	> 12 dB (@ ± 0.4 nm around center wavelength)

Notes:
1. Denotes Beta product. For more details see www.micronoptics.com/product_designation.php.
2. Three thermal cycles from min to max temperature.
3. Typical: 50°C and 85% Relative Humidity. Extreme conditions: ±1.3°C (±36pm); 1,000 hour soak 75°C and 75% Relative Humidity.



Ordering Information

os4100 - wwww - 1xx-1yy (Example: os4100 -1563-1FC-1UT)

wwww: Wavelength (nm)	1xx: Cable 1, Length & Connector	1yy: Cable 2, Length & Connector
Standard wavelengths: 1515 to 1587nm in 4nm intervals.	1 1m standard, Cable Length UT Unterminated FC FC/APC Connector	1 1m standard, Cable Length UT Unterminated FC FC/APC Connector

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