

Non-metallic Temperature Sensor | os4300

Applications

For Long-term Monitoring and Feedback in:

- Lightning prone environments
- Electrical conversion, power switching stations, power transformers
- Industrial, processing, and nuclear plants
- Cargo and other storage containers
- Brakes, engines and other active parts of rolling stock, aircraft, automotive, and marine vessels
- Wind, Energy, Systems
- Sub-terrain infrastructure

Features

- Non-metallic design
- Can be daisy-chained
- Fast response
- High resolution
- Ideal for harsh environments
- Insensitive to corrosion
- Immune to electromagnetic fields
- No risk of ESD or sparks
- Easy to install
- Long lifetime
- Water resistant
- Remote sensing
- Absolute calibrated sensor option

Description

The os4300 Non-metallic Temperature Sensor is a revolutionary product based on Micron Optics' patented micro opto-mechanical technology.

The os4300 leverages materials technology and know-how from other Micron Optics sensors to create this small and reliable package. To ensure long-term stability by design, the os4300 tube type sensor uses neither epoxies nor other glues as part of its structure.



os4310 - Single Ended & Double Ended Sensor



os4330 - Non-metallic Epoxy Mount



os4350 - Armored Cable, Flange Mount

The os4300 provides an ideal alternative to electrical temperature sensors, featuring advantages such as fast response time, high accuracy, long-term stability, and premium performance under harsh environmental conditions. Variations of the os4300 make it easy to select the right configuration to monitor temperature in your specific application.

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Specifications ^B 1

	os4310 Non-metallic	os4330 Non-metallic Epoxy Mount	os4350 Armored Cable, Flange Mount
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Thermal Properties

Operating Temperature Range	-40 to +120°C		
Response Time ²	0.7 seconds	4.6 seconds	4.2 seconds
Cable Temperature Range	-40 to 250°C (FC/APC Connectors -40 to 80°C)		
Uncalibrated:	Long-Term Repeatability ³		± 1°C
	Short-Term Repeatability		± 1°C
	Thermal Response		9.9 pm/°C (± 1.7 pm/°C)
Calibrated:	Long-Term Accuracy ⁴		± 0.5°C
	Short-Term Accuracy ³		Typical, ± 0.2°C
	Thermal Response		Provided on Calibration Certificate

Physical Properties

Dimensions - L x W x H (mm)	18.8 x 3.2 Dia.	31.8 x 7.6 x 7.6	31.5 x 15.0 x 7.6
Weight (including cable)	2.6 g	4.3 g	38 g
Housing Material	Alumina	Graphite	Anodized Aluminum
Cable Length	1 m (± 10 cm)		
Fiber Type	SMF28-Compatible		
Cable Type	0.9 mm Fiberglass Braid	0.9 mm Fiberglass Braid	3mm Armored Cable
Fiber Coating	Polyimide		
Cable Minimum Bend Radius	12 mm		
FC/APC Connectors	Optional	Optional	Included
Fastening Methods	Bond Strain Reliefs only	Epoxy	#6 Self Drilling Screws or Epoxy

Optical Properties

Center Wavelength	1462 to 1618nm 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. Time to reach 63% of total temperature drop in water (100°C).
3. Four (4) thermal cycles from min to max temperature. Max. accuracy error ±0.4°C without data averaging.
4. Based on 120°C soak for 1,000 hours.

Ordering Information

os43aa-wwww-1xx-1yy-zz

(Example: os4330-1560-1FC-1FC-UC)

aa: Model	wwww: Wavelength (nm)	1xx: Cable 1, Length & Connector	1yy: Cable 2, Length & Connector	zz: Calibration Range
10 Non-metallic	Standard wavelengths, 1512nm to 1588 in 4nm intervals.	1 1 m standard, Cable Length	1 1 m standard, Cable Length	UC Uncalibrated
30 Non-metallic, Epoxy mount		UT Unterminated	000 Single Ended Sensor (available only for os4310)	SR Standard Range, -40 to 120°C
50 Armored cable, Flange mount (available only with FC option)		FC FC/APC Connector	UT Unterminated FC FC/APC Connector	