

# Fiber Optic Sensors

## For Use with DP1511, DP1521 and DP1531 Monitors

OS1513-L1-R1-4,  
\$1775, shown smaller  
than actual size.

OS1513/OS1533 Series  
Starts at

**\$1715**



- ✓ ±1.0% Accuracy
- ✓ Emissivity Adjustment
- ✓ Unaffected by Electrical Noise
- ✓ Usable in Vacuum Chambers at up to 10<sup>-7</sup> Torr

### OS1513 General Purpose Sensor

- ✓ 10 msec Time Constant
- ✓ 160 to 1535°C (320 to 2800°F) Temperature Range
- ✓ 0.020" at 6" Minimum Spot Size Available

### OS1533 High Speed Sensor

- ✓ 0.3 msec Time Constant
- ✓ 425 to 1370°C (800 to 2500°F) Temperature Range in Subranges of No More than 2:1 (exam) 400-800°
- ✓ 0.010" at 3" Minimum Spot Size Available



Mounting bracket included.



DP1511 general purpose single channel monitor, \$3040, sold separately, see page J-121.

The OS1513 and OS1533 fiber optic detectors are designed to be used specifically with the DP1511, DP1521 and DP1531 monitors and are appropriate for a variety of applications.

These fiber optic detectors are capable of temperatures measurements from 160 to 1535°C (320 to 2800°F).

These detectors are designed to be used with the appropriate monitor when conventional line of sight infrared measurements are not possible. The advantages of these fiber optic sensors include the ability to bypass opaque obstacles and to

#### Custom Assemblies Available

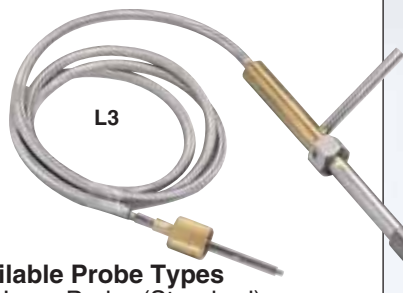
- ✓ Small Spot Sizes Down to 0.004"
- ✓ Temperatures to 427°C (800°F) at Pressures to 30,000 PSI
- ✓ Ceramic/Metal Tip Probe for Induction Heating Where Probe is Close to Surface
- ✓ Polymer Bolt Probe for Extrusion Applications
- ✓ Ejector Pin Probe for Injection Molding

OMEGACARE<sup>SM</sup> extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE<sup>SM</sup> covers parts, labor and equivalent loaners.



DP1531 19" single channel high speed monitor, \$4995, sold separately.

Typical Fiber Optic Probes shown. L2, L3 and L4 are custom assemblies, Consult OMEGA for details. L1 shown with optional bifurcated cable for backlighting.



### Available Probe Types

- L1 Lens Probe (Standard)
- L2 Ceramic/Metal Tip
- L3 Polymer Bolt
- L4 Ejector Pin Probe

reach into closed areas for viewing. They can take measurements unattainable by conventional infrared pyrometers, as they are unaffected by media in the environment, such as smoke, water vapor, etc. The OS1513 and OS1533 are recommended for measurements in high energy fields or of small objects, down to 0.004" in diameter. For remote mounting of the electronics out of hazardous environments, the fiber optic lens and cable may be remotely mounted up to 9 m (30') from the infrared detector head. They can also be used in vacuum chamber applications, where the fiber optic assembly can be placed in vacuums to  $10^{-7}$  Torr. Also available is a backlighting capability, where a beam of light illuminates the target, providing accurate indication of the target area.

Important factors which determine the fiber optic assembly best suited for your application are: the distance from the fiber optic lens to the surface being measured, the size of the object being measured; the temperature range being measured; the ambient temperature around the fiber optic cable; the length of the fiber optic cable; how the surface is being heated; and the atmospheric conditions between the sensor and the product.

### Specifications

#### Ambient Temperature:

10 to 50°C (50 to 122°F)

**Accuracy:** ±1.0% rdg

**Repeatability:** ±0.5% rdg

**Spectral Response:** 0.91 to 2.3 microns

**Time Constant:** 10 msec, OS1513; 0.3 msec, OS1533

**Dimensions:** 6.4 H x 10 W x 13 cm L (2.5 x 4 x 5")

**Weight:** 1.8 kg (4 lb)

**Fiber Optic Cable:** Glass or quartz fiber with heavy duty stainless steel jacket standard, 0.020"/0.070 cable Dia., 149°C (300°F) ambient max

**MOST POPULAR MODELS HIGHLIGHTED!**

### To Order (Specify Model Number)

| Model No.                                | Base Price | Temperature Range               | Spot Size @ Target Dist | Cable Length |
|--|------------|---------------------------------|-------------------------|--------------|
| <b>OS1513-L1-R1-4</b><br>General Purpose | \$1775     | 540 to 1090°C<br>1000 to 2000°F | 0.020" @ 6"             | 1.2 m (4')   |
| <b>OS1513-L1-R2-1</b><br>General Purpose | 1715       | 160 to 340°C<br>320 to 650°F    | 0.075" @ 6"             | 0.3 m (1')   |
| <b>OS1513-L1-R3-4</b><br>General Purpose | 1775       | 260 to 540°C<br>500 to 1000°F   | 0.22" @ 8"              | 1.2 m (4')   |
| <b>OS1513-L1-R4-4</b><br>General Purpose | 1775       | 760 to 1535°C<br>1400 to 2800°F | 1.0" @ 26"              | 1.2 m (4')   |
| <b>OS1533-L1-R5-4</b><br>High Speed      | 2400       | 675 to 1370°C<br>1250 to 2500°F | 0.10" @ 12"             | 1.2 m (4')   |
| <b>OS1533-L1-R6-5</b><br>High Speed      | 2420       | 815 to 1370°C<br>1500 to 2500°F | 0.040" @ 6"             | 1.5 m (5')   |
| <b>OS1533-L1-R7-4</b><br>High Speed      | 2700       | 425 to 870°C<br>800 to 1600°F   | 0.010" @ 3"             | 1.2 m (4')   |

Comes with connection cable to a monitor, mounting bracket, and operator's manual.

Consult OMEGA for ordering and pricing on custom OS1513 or OS1533 fiber optic systems.

**Notes:** Other temperature ranges and spot size @ target distance and vacuum bushing available; consult factory.

The OS1513/OS1533 fiber optic sensor do not operate stand-alone. Must be used in conjunction with DP1511, DP1512 or DP 1531 monitors.

**Ordering Example:** OS1533-L1-R7-4, high speed sensor with temperature range of 425 to 870°C, spot size of 0.010" @ 3", and 1.2 m (4') cable, \$2700.

OCW-3, OMEGACARE<sup>SM</sup> extends standard 2-year warranty to a total of 5 years (\$350), \$2700 + 350 = \$3050.

Backlight source, see OS1500-BLS for specifications.



OS1512 infrared detector shown with the DP1500 monitor.



#### UNITED STATES

[www.omega.com](http://www.omega.com)  
1-800-TC-OMEGA  
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#### CANADA

[www.omega.ca](http://www.omega.ca)  
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1-800-TC-OMEGA

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0800-8266342

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088-466-342

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