Smart Infrared Temperature Sensors

The OMEGA® OS35 Series infrared temperature sensors offer intelligence in a rugged, easy-to-use package. The OS35 is centered around a high-speed microprocessor that continuously monitors and adjusts the complete system. While performing the complex algorithms determining the output, it calibrates itself about once every second, removing any concerns over drift or sudden changes. Other advanced features include emissivity shift compensation and ambient radiation error correction. The rugged housing withstands thermal and mechanical shocks. The built-in air purge prevents dust, dirt, or condensing vapors from depositing on sensor optics, assuring long-term accuracy under all environmental conditions. The integral heat exchanger eliminates drift by automatically warming (or cooling) supply air to match the optical aperture temperature.

Specifications

Ranges:
-30 to 70°C (-22 to 158°F)
0 to 100°C (32 to 212°F)
0 to 250°C (32 to 482°F)
0 to 500°C (32 to 932°F)
0 to 1000°C (32 to 1832°F)

Accuracy:
OS35-3: ±1°C or 1%
OS35-20: ±1.5°C or ±1.5% (±2% for 0 to 1000°C range)

Optics of 3:1 or 20:1
Outputs of 0 to 5V, 0 to 10V, 4 to 20 mA, or RS232
Ranges from -30 to 1000°C (-22 to 1832°F)
Digital System with Auto Calibration
Rugged Housing with Air Purge
Automatic Emissivity Shift and Ambient Radiation Correction

Repeatability:
±1-bit,
0 to 100°C = ±0.1°C,
0 to 250°C = ±0.25°C,
0 to 500°C = ±0.5°C,
0 to 1000°C = ±1°C

Output: 0 to 5V, 0 to 10V (24 Vdc power only), 4 to 20 mA (50 Ω maximum), RS232 (12 Vdc power only)
Update Time: Approximately 250 ms
Emissivity Setting: 0.90
Spectral Response: 5.5 to 20 microns
Minimum Spot Size: 3.0 mm (0.12") or 15.9 mm (0.625")
Power: 12 or 24 Vdc (10%); shuts off when voltage is functionally low
Output Impedance: 750 Ω on 0 to 5V and 0 to 10V models
Minimum Load Impedance: 100 kΩ
Maximum Loop Impedance: 50 Ω maximum
Power Consumption: <800 mW at 24 Vdc and <600 mW at 12 Vdc
Ambient Temperature: 0 to 70°C (32 to 158°F)
Storage Temperature: -10 to 70°C (14 to 158°F)

Relative Humidity:
95% non-condensing

Construction:
Heavy-duty alloy casting

Air Purge:
Built-in with small aperture and heat exchanger that minimizes drift for superb accuracy

Air Tubing:
0.9 m (3') of polyurethane tubing ⅛ OD x 0.031 wall

Cable:
0.9 m (3") of 5-conductor, tinned copper, twisted pair polypropylene, insulated with shielded wire

Rating:
IP54 (with air on)

Dimensions:
94.3 H x 34.9 W x 19.4 mm D (3.71 x 1.37 x 0.76”);
OS35-20 models include a 41.3 x 19 mm (1.63 x 0.75") diameter snout

Weight:
Approximately 227 g (8 oz)
To Order  Visit omega.com/os35 for Pricing and Details

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS35-3-MA-100C-24V</td>
<td>Infrared temperature sensor, 3:1 optics, 0 to 100°C (32 to 212°F) range</td>
</tr>
<tr>
<td>OS35-3-MA-250C-24V</td>
<td>Infrared temperature sensor, 3:1 optics, 0 to 250°C (32 to 482°F) range</td>
</tr>
<tr>
<td>OS35-3-MA-70C-24V</td>
<td>Infrared temperature sensor, 3:1 optics, -30 to 70°C (-22 to 158°F) range</td>
</tr>
<tr>
<td>OS35-20-MA-100C-24V</td>
<td>Infrared temperature sensor, 20:1 optics, 0 to 100°C (32 to 212°F) range</td>
</tr>
<tr>
<td>OS35-20-MA-250C-24V</td>
<td>Infrared temperature sensor, 20:1 optics, 0 to 250°C (32 to 482°F) range</td>
</tr>
<tr>
<td>OS35-20-MA-500C-24V</td>
<td>Infrared temperature sensor, 20:1 optics, 0 to 500°C (32 to 932°F) range</td>
</tr>
<tr>
<td>OS35-20-MA-1000C-24V</td>
<td>Infrared temperature sensor, 20:1 optics, 0 to 1000°C (32 to 1832°F) range</td>
</tr>
</tbody>
</table>

Note: For 12V power requirement, change “-24V” in model number to “-12V”, no additional cost.
For 5V output, change “-MA” in model number to “-5V”, no additional cost.
For 10V output, which is available only on 24V power models, change “-MA” in model number to “-10V”, no additional cost.
For RS232 output, which is available only in 0 to 250°C range with 12V power, change “-MA” in model number to ”-RS”, no additional cost.
Comes complete with air tubing and operator’s manual.

Ordering Examples: OS35-3-5V-100C-24V, infrared temperature sensor, 3:1 optics, 0 to 100°C range, 0 to 5V output.
OCW-2, OMEGACARE extends standard 2-year warranty to a total of 4 years.
OS35-20-MA-1000C-24V, infrared temperature sensor, 20:1 optics, 0 to 1000°C (32 to 212°F) range, 0 to 10V output.