Miniature Industrial, Non-Contact IR Temperature Sensor/Transmitters
With Built-In LED Display Option

OS100E Series

-18 to 538°C (0 to 1000°F) Temperature Range
Adjustable Emissivity from 0.10 to 1.0
Fast, Accurate, Repeatable Readings
Type K Thermocouple, 0 to 5 Vdc, 0 to 10 Vdc, 4 to 20 mA, or 1 mV/Deg
Analog Output Models
Built-In °C/°F-Switchable
LED Display Model Available
Rugged, Miniature Industrial Enclosure with Remote Sensor Head
User-Adjustable High or Low Alarm Output
PC Interface Standard on All Models
OS100-SOFT Data Acquisition and Real-Time Temperature Display Software
NEMA 4 (IP65) Rated Aluminum Housing
Models with High-Temperature Sensor Head Available (See “To Order” Notes)

Specifications
Temperature Range: -18 to 538°C (0 to 1000°F)
Accuracy @ 22°C (72°F) Ambient Temperature and Emissivity of 0.95 or Greater: ±2% rdg or 2.2°C (4°F), whichever is greater
Optical Field of View: 6.1 (distance/spot size)
Sensor Head Cable Extension: Up to 15 m (50') total
Repeatability: ±1% rdg
Spectral Response: 5 to 14 microns
Response Time: 100 ms (0 to 63% of final value)
Emissivity Range: 0.1 to 1.00, adjustable
Display Option (102E): 4-digit LED, °C/°F switchable
Operating Temperature:
Main Transmitter: 0 to 50°C (32 to 122°F)
Sensor Head: 0 to 70°C (32 to 158°F)
Sensor Head (-HT Model): 0 to 85°C (32 to 185°F)
Sensor Head with OS100-WC (Water Cooling Jacket): 0 to 200°C (32 to 392°F)
Operating Relative Humidity: Less than 95% RH, non-condensing
Water Flow Rate for OS100-WC: 0.25 GPM, room temperature
Thermal Shock: About 30 minutes for 25°C (77°F) abrupt ambient temperature change
Warm-Up Period: 3 minutes

The OMEGA® OS100E Series miniature infrared transmitters measure a temperature range of -18 to 538°C (0 to 1000°F). They consist of a remotely mounted infrared sensor head connected to a high-performance, microprocessor-based signal conditioner. The miniature sensor head is ideal for measuring temperature in confined, hard-to-reach places and harsh environments. The sensor head is connected to the main electronics housing via a 1.8 m (6') shielded cable. The signal conditioner’s main electronics are mounted in a rugged NEMA 4 (IP65) rated die-cast aluminum housing. OS102E includes a built-in LED display that is switchable between °C and °F. Standard features include adjustable emissivity, field-adjustable alarm output, and RS232 PC interface. The unit has analog outputs such as 4 to 20 mA, 0/5 Vdc, 0/10 Vdc, 1 mV/Deg, and Type K thermocouple.

OS100E-MV shown smaller than actual size.

OS101E-MV

Air Flow Rate for OS100-AP:
1 CFM (0.5 L/s)
Power: 12 to 24 Vdc @ 150 mA
PC Communications:
Serial RS232, 2-way
Analog Outputs:
MV: 1 mV/Deg
K: Type K thermocouple
MA: 4 to 20 mA
V1: 0 to 5 Vdc
V2: 0 to 10 Vdc
Output Load Requirements:
Min Load: 1 kΩ (0 to 5 Vdc), 2 kΩ (0 to 10 Vdc)
Max Load (4 to 20 mA):
(supply power - 4)/20 mA
Transmitter Housing:
NEMA 4 (IP65), die-cast aluminum
Sensor Head Housing:
NEMA 4 (IP65), aluminum
Alarm Output: Open drain, 100 mA
Alarm Setpoint: 0 to 100%, adjustable
Alarm Deadband: 5.5°C (10°F)

OSMAGICO Extended Warranty Program

OMEGACARE™ extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE™ covers parts, labor and equivalent loaners.
Available Accessories

OS100-LS laser sighting.

All models shown smaller than actual size.

Optical Field of View

Dimensions:
Sensor Head:
25.4 OD x 63.5 mm L (1 x 2.5")
Main Housing:
65.5 W x 30.5 D x 115.3 mm L
(2.58 x 1.2 x 4.54")

Weight: 272 g (0.6 lb)

LASER SIGHT ACCESSORY
(OS100-LS)

Wavelength (Color):
630 to 670 nm (red)

Operating Distance (Laser Dot):
Up to 9.1 m (30')

Max Output Optical Power:
Less than 1 mW @ 25°C (77°F) ambient temperature

European Classification: Class 2,
EN60825-1/11.2001

Max Operating Current:
25 mA @ 3 Vdc

FDA Classification: Complies with 21 CFR 1040.10, Class II Laser Product

Beam Diameter: 5 mm

Beam Divergence: <2 mrad

Operating Temperature:
0 to 50°C (32 to 122°F)

Operating Relative Humidity: Less than 95% RH, non-condensing

Power Switch: On/off slide switch on the battery pack

Power Indicator: Red LED

Power: Battery pack, 3 Vdc (consists of two 1.5 Vdc “AA” lithium batteries)

Dimensions:
38 Dia. x 50.8 mm L (1.5 x 2")

Software (Included): Requires Windows 98 or newer Windows operating system

To Order
Visit omega.com/os101e for Pricing and Details

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS101E-MV</td>
<td>Transmitter with 1 mV/°C or °F output</td>
</tr>
<tr>
<td>OS101E-V1</td>
<td>Transmitter with 0 to 5 Vdc output</td>
</tr>
<tr>
<td>OS101E-V2</td>
<td>Transmitter with 0 to 10 Vdc output</td>
</tr>
<tr>
<td>OS101E-MA</td>
<td>Transmitter with 4 to 20 mA output</td>
</tr>
<tr>
<td>OS101E-K</td>
<td>Transmitter with Type K thermocouple output</td>
</tr>
</tbody>
</table>

Models with High-Temperature Sensing Head

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS101E-MV-HT</td>
<td>Transmitter with 1 mV/°C or °F output</td>
</tr>
<tr>
<td>OS101E-V1-HT</td>
<td>Transmitter with 0 to 5 Vdc output</td>
</tr>
<tr>
<td>OS101E-V2-HT</td>
<td>Transmitter with 0 to 10 Vdc output</td>
</tr>
<tr>
<td>OS101E-MA-HT</td>
<td>Transmitter with 4 to 20 mA output</td>
</tr>
<tr>
<td>OS101E-K-HT</td>
<td>Transmitter with Type K thermocouple output</td>
</tr>
</tbody>
</table>

Models with Built-In LED Display

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS102E-MV</td>
<td>Transmitter with 1 mV/°C or °F output and LED display</td>
</tr>
<tr>
<td>OS102E-V1</td>
<td>Transmitter with 0 to 5 Vdc output and LED display</td>
</tr>
<tr>
<td>OS102E-V2</td>
<td>Transmitter with 0 to 10 Vdc output and LED display</td>
</tr>
<tr>
<td>OS102E-MA</td>
<td>Transmitter with 4 to 20 mA output and LED display</td>
</tr>
<tr>
<td>OS102E-K</td>
<td>Transmitter with Type K output and LED display</td>
</tr>
</tbody>
</table>

Models with High-Temperature Sensing Head

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS102E-MV-HT</td>
<td>Transmitter with 1 mV/°C or °F output and LED display</td>
</tr>
<tr>
<td>OS102E-V1-HT</td>
<td>Transmitter with 0 to 5 Vdc output and LED display</td>
</tr>
<tr>
<td>OS102E-V2-HT</td>
<td>Transmitter with 0 to 10 Vdc output and LED display</td>
</tr>
<tr>
<td>OS102E-MA-HT</td>
<td>Transmitter with 4 to 20 mA output and LED display</td>
</tr>
<tr>
<td>OS102E-K-HT</td>
<td>Transmitter with Type K output and LED display</td>
</tr>
</tbody>
</table>

Comes complete with sensor head and 1.8 m (6') cable, sensor head mounting nut, main electronics housing, user software and operator’s manual.

Ordering Examples: OS101E-MA + OS100-LS + OS100-CA15FT, transmitter with 4 to 20 mA output, laser sighting accessory and 4.6 m (15’) sensor head extension cable.

OCW-3, OMEGACARESM extends standard 1-year warranty to a total of 4 years.

Accessories

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS100-MB</td>
<td>Mounting bracket</td>
</tr>
<tr>
<td>OS100-DR</td>
<td>DIN rail mounting adaptor</td>
</tr>
<tr>
<td>OS100-AP</td>
<td>Air purge collar</td>
</tr>
<tr>
<td>OS100-WC</td>
<td>Water cooling jacket, up to 200°C</td>
</tr>
<tr>
<td>OS100-LS</td>
<td>Laser sighting accessory</td>
</tr>
</tbody>
</table>
| OS100-CA15FT | Sensor head extension cable, 4.6 m (15’)
| OS100-CA25FT | Sensor head extension cable, 7.6 m (25’)
| TX8-100      | Power/output cable, 30 m (100’)
| PSR-24S      | Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, screw terminals, UL |
| PSR-24L      | Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, stripped leads, UL |
| PSR-24L-230  | Regulated power supply, European plug, 230 Vac input, 24 Vdc output, 400 mA, stripped leads |
| PSU-93       | Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal |
| CAL-3-IR     | NIST-traceable calibration |