

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

OS100E Series



Optional

- ✓ -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)

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



Strain relief port for power and output leads.

OS102E-MV shown smaller than actual size.

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.

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



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)



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

Available Accessories

OS100-LS laser sighting.



OS100-MB mounting bracket.

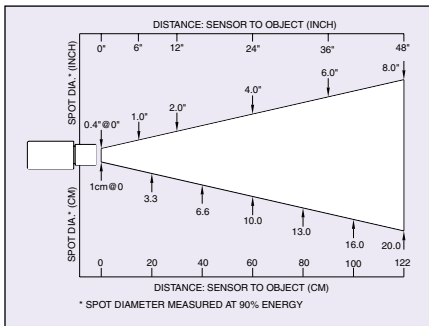
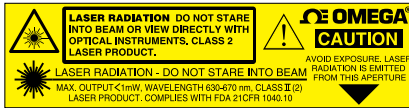


OS100-WC water cooling jacket.



OS100-AP air purge collar.

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

Model Number	Description
OS101E-MV	Transmitter with 1 mV/°C or °F output
OS101E-V1	Transmitter with 0 to 5 Vdc output
OS101E-V2	Transmitter with 0 to 10 Vdc output
OS101E-MA	Transmitter with 4 to 20 mA output
OS101E-K	Transmitter with Type K thermocouple output
Models with High-Temperature Sensing Head	
OS101E-MV-HT	Transmitter with 1 mV/°C or °F output
OS101E-V1-HT	Transmitter with 0 to 5 Vdc output
OS101E-V2-HT	Transmitter with 0 to 10 Vdc output
OS101E-MA-HT	Transmitter with 4 to 20 mA output
OS101E-K-HT	Transmitter with Type K thermocouple output

Models with Built-In LED Display

Model Number	Description
OS102E-MV	Transmitter with 1 mV/°C or °F output and LED display
OS102E-V1	Transmitter with 0 to 5 Vdc output and LED display
OS102E-V2	Transmitter with 0 to 10 Vdc output and LED display
OS102E-MA	Transmitter with 4 to 20 mA output and LED display
OS102E-K	Transmitter with Type K output and LED display
Models with High-Temperature Sensing Head	
OS102E-MV-HT	Transmitter with 1 mV/°C or °F output and LED display
OS102E-V1-HT	Transmitter with 0 to 5 Vdc output and LED display
OS102E-V2-HT	Transmitter with 0 to 10 Vdc output and LED display
OS102E-MA-HT	Transmitter with 4 to 20 mA output and LED display
OS102E-K-HT	Transmitter with Type K output and LED display

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

Model Number	Description
OS100-MB	Mounting bracket
OS100-DR	DIN rail mounting adaptor
OS100-AP	Air purge collar
OS100-WC	Water cooling jacket, up to 200°C
OS100-LS	Laser sighting accessory
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, CE
PSU-93	Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal
CAL-3-IR	NIST-traceable calibration

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