

Fixed IR Temperature Sensor/Transmitters with Built-In 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)

Available Accessories

OS100-LS laser sighting.



OS100-MB mounting bracket.

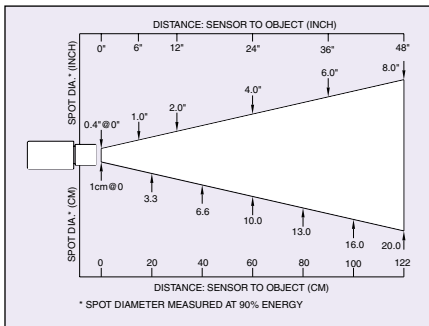
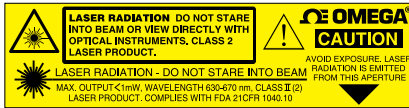


OS100-WC water cooling jacket.



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.

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
PSU-93	Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal