

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)

