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

OS100E Series

1 YEAR WARRANTY | NIST Optional | CE

✔ **-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 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.

OS101E-MV

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

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
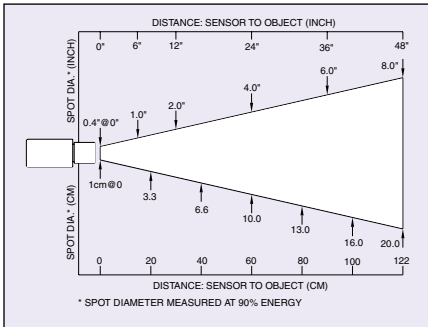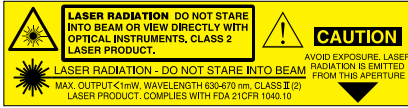
OS100-LS laser sighting.

OS100-MB mounting bracket.

OS100-AP air purge collar.

OS100-WC water cooling jacket.

All models shown smaller than actual size.

LASER RADIATION DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS, CLASS 2 LASER PRODUCT.

CAUTION
AVOID EXPOSURE. LASER RADIATION IS EMITTED FROM THIS APERTURE

LASER RADIATION - DO NOT STARE INTO BEAM
MAX. OUTPUT<1mW, WAVELENGTH 630-670 nm, CLASS II (2) LASER PRODUCT. COMPLIES WITH FDA 21CFR 1040.10

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 newportUS.com/os101e 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,** OMEGACARE*SM* 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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