



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

- ✓ -18 to 538°C 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 Analogue 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
- ✓ IP65 Rated Aluminium Housing
- ✓ Models with High-Temperature Sensor Head Available (See "To Order" Notes)

OMEGA's new OS100E Series miniature infrared transmitters measure a temperature range of -18 to 538°C. 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 shielded cable. The signal conditioner's main electronics are mounted in a rugged IP65 rated die-cast aluminium housing. Model 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 analogue outputs such as 4 to 20 mA, 0/5 Vdc, 0/10 Vdc, 1 mV/Deg, and Type K thermocouple.

OS101E-MV-(\*)  
Starts at  
**£131**



Models shown smaller than actual size.

OS102E-MV-(\*)  
Starts at  
**£181**

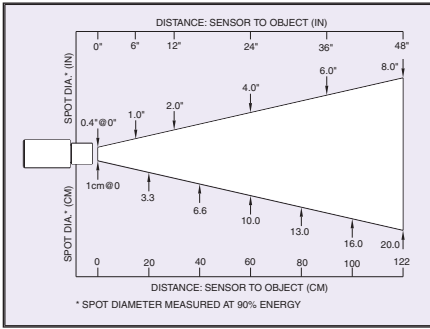
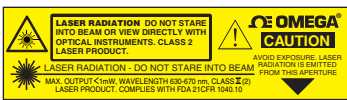


Strain relief port for power and output leads.

## Specifications

**Temperature Range:** -18 to 538°C  
**Accuracy @ 22°C Ambient Temperature and Emissivity of 0.95 or Greater:** ±2% rdg or 2.2°C, whichever is greater  
**Optical Field of View:** 6:1 (distance/spot size)  
**Sensor Head Cable Extension:** Up to 15 m 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  
**Sensor Head:** 0 to 70°C  
**Sensor Head (-HT Model):** 0 to 85°C  
**Sensor Head with OS100-WC (Water Cooling Jacket):** 0 to 200°C

**Operating Relative Humidity:** Less than 95% RH, non-condensing  
**Water Flow Rate for OS100-WC:** 0.96 l/m (0.25 GPM), room temperature  
**Thermal Shock:** About 30 minutes for 25°C abrupt ambient temperature change  
**Warm-Up Period:** 3 minutes  
**Air Flow Rate for OS100-AP:** 0.5 l/s (1 CFM)  
**Power:** 12 to 24 Vdc @ 150 mA  
**PC Communications:** Serial RS232, 2-way  
**Analogue Outputs:**  
**MV:** 1 mV/Deg  
**K:** K Type thermocouple  
**MA:** 4 to 20 mA  
**V1:** 0 to 5 Vdc  
**V2:** 0 to 10 Vdc  
**Output Load Requirements:**  
**Min Load:** 1 k (0 to 5 Vdc), 2 k (0 to 10 Vdc)  
**Max Load (4 to 20 mA):** (supply power - 4)/20 mA



Optical Field of View

**Transmitter Housing:** IP65, die-cast aluminium  
**Sensor Head Housing:** IP65, aluminium  
**Alarm Output:** Open drain, 100 mA  
**Alarm Setpoint:** 0 to 100%, adjustable  
**Alarm Deadband:** 5.5°C  
**Dimensions:**

**Sensor Head:** 25.4 OD x 63.5 mm L  
**Main Housing:** 65.5 W x 30.5 H x 115.3 mm L

**Weight:** 272 g

**LASER SIGHT ACCESSORY (OS100-LS)**

**Wavelength (Colour):** 630 to 670 nm (red)

**Operating Distance (Laser Dot):** Up to 9.1 m

**Max Output Optical Power:** Less than 1 mW @ 25°C 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

**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

**Software (included):** Requires Windows 98 Windows operating system



**MOST POPULAR MODELS HIGHLIGHTED!**

**To Order (Specify Model Number)**

Model Number	Price	Description
OS101E-MV	£131	Transmitter with 1 mV/°C or °F output
OS101E-V1	131	Transmitter with 0 to 5 Vdc output
OS101E-V2	131	Transmitter with 0 to 10 Vdc output
OS101E-MA	164	Transmitter with 4 to 20 mA output
OS101E-K	131	Transmitter with Type K T/C output
<b>Models with High-Temperature Sensing Head</b>		
OS101E-MV-HT	£198	Transmitter with 1 mV/°C or °F output
OS101E-V1-HT	198	Transmitter with 0 to 5 Vdc output
OS101E-V2-HT	198	Transmitter with 0 to 10 Vdc output
OS101E-MA-HT	231	Transmitter with 4 to 20 mA output
OS101E-K-HT	198	Transmitter with Type K T/C output

**Models with Built-In LED Display**

Model Number	Price	Description
OS102E-MV	£181	Transmitter with 1 mV/°C or °F output and LED display
OS102E-V1	181	Transmitter with 0 to 5 Vdc output and LED display
OS102E-V2	181	Transmitter with 0 to 10 Vdc output and LED display
OS102E-MA	214	Transmitter with 4 to 20 mA output and LED display
OS102E-K	181	Transmitter with Type K output and LED display
<b>Models with High-Temperature Sensing Head</b>		
OS102E-MV-HT	£248	Transmitter with 1 mV/°C or °F output and LED display
OS102E-V1-HT	248	Transmitter with 0 to 5 Vdc output and LED display
OS102E-V2-HT	248	Transmitter with 0 to 10 Vdc output and LED display
OS102E-MA-HT	281	Transmitter with 4 to 20 mA output and LED display
OS102E-K-HT	248	Transmitter with Type K output and LED display

Each model comes with sensor head and 1.8 m cable, sensor head mounting nut, main electronics housing, user software and operator's manual.  
**Ordering Example:** OS101E-MA + OS100-LS + OS100-CA15FT, transmitter with 4 to 20 mA output, laser sighting accessory and 4.6 m sensor head extension cable, £164 + 117 + 23.50 = £304.50

**Accessories**

Model Number	Price	Description
OS100-MB	£13.50	Mounting bracket
OS100-DR	16.75	DIN rail mounting adaptor
OS100-AP	20.00	Air purge collar
OS100-WC	117.00	Water cooling jacket, up to 200°C
OS100-LS	117.00	Laser sighting accessory
OS100-CA15FT	23.50	Sensor head extension cable, 4.6 m
OS100-CA25FT	30.00	Sensor head extension cable, 7.6 m
TX8-100	30.50	Power/output cable, 30 m
PSR-24L-230-UK	40.00	Regulated power supply, UK plug, 230 Vac input, 24 Vdc output, 400 mA, stripped leads
PSU-93-UK	19.00	Unregulated power supply, 16 Vdc, 300 mA max, 230 Vac, UK plug
CAL-3-IR	90.00	Traceable calibration certificate with test results

INFRARED



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