



# Compact Non-Contact Temperature Sensor With Controllable Emissivity Setting

OS212, OS152, OS302 and  
OS802 Series



Optional†



OS212-LT,  
shown with sensor  
head (included),  
shown actual size.

- ✓ Temperature Range -20 to 500°C (-4 to 932°F)
- ✓ 2-Wire 4 to 20 mA Output Proportional to Target Temperature
- ✓ 4 to 20 mA Input to Control Emissivity Setting
- ✓ Optional Manual Emissivity Adjuster
- ✓ Field of View: 2:1, 15:1, 30:1 or Close Focus
- ✓ Fast Response with High Stability
- ✓ Stainless Steel Housing, Sealed to IP65
- ✓ Quick and Easy Installation
- ✓ Optional Air/Water Cooled Housing, Air Purge Collar, Laser Sighting Tool and Mounting Brackets

The OMEGA® Infrared Series is a range of high quality, low cost, compact sensors which measure the temperature of inaccessible or moving objects and materials. They measure temperatures from -20 to 500°C (-4 to 932°F), accurately and consistently, with an outstanding response time of 240 mS. OMEGA sensors transmit the target temperature as a 4 to 20 mA output and offer a simple solution for most non-contact temperature measurement applications. The sensor's emissivity setting can be adjusted from 0.2 to 1.0 to cope with different target materials and is controlled by a 4 to 20 mA input. This gives the opportunity to adjust the emissivity setting automatically from a programmable logic controller (PLC). Alternatively the emissivity setting can be adjusted manually using the OS210-PT. If the 4 to 20 mA input is left open or short-circuit the emissivity setting defaults to 0.95.

† Refer to accessory chart on J-3 for NIST calibration ordering information.

## Specifications

**Infrared Sensor Output:** 4 to 20 mA

**Accuracy:** ±1% of reading or ±1°C whichever is greater

**Repeatability:** ±0.5% of reading or ±0.5°C whichever is greater

**Emissivity:** 0.2 to 1.0 via 4 to 20 mA input

**Response Time t90:** 240 mS (90% response)

**Spectral Range:** 8 to 14 μm

**Supply Voltage:** 24 Vdc (28 Vdc max)

**Min Sensor Voltage:** 6 Vdc

**Max Loop Impedance:** 900 Ω (4 to 20 mA output)

**Input Impedance:** 50 Ω

### Mechanical

**Construction:** Stainless Steel

**Dimensions:** 103 L x 18 mm D (4.05 x 0.71")

**Thread Mounting:** M16 x 1 mm pitch

**Cable Length:** 1 m (3.3') longer lengths available to order

**Weight:** 95 g (3.4 oz) with cable

**Environmental Rating:** IP65

**Ambient Temperature Range:** 0 to 70°C (32 to 158°F)

**Relative Humidity:** 95% max non-condensing

## Tune Emissivity Adjuster Specifications (OS210-PT)

**Output:** 4 to 20 mA

**Supply Voltage:** 24 Vdc (13V to 28 Vdc)

**Display Format:** 3.5 digit LCD

**Display Units:**

**Emissivity:** 0.2 to 1.0

**Current:** 4 to 20 mA

**Adjustment:** Pushbuttons (raise/lower/set)

### Mechanical

**Construction:** Polycarbonate with gasket, transparent lid (PC) and quick release screws

**Mounting:** Surface

**Dimensions:** 65 H x 50 W x 35 mm D (2.56 x 1.97 x 1.38")

**Weight:** 72 g (2.5 oz)

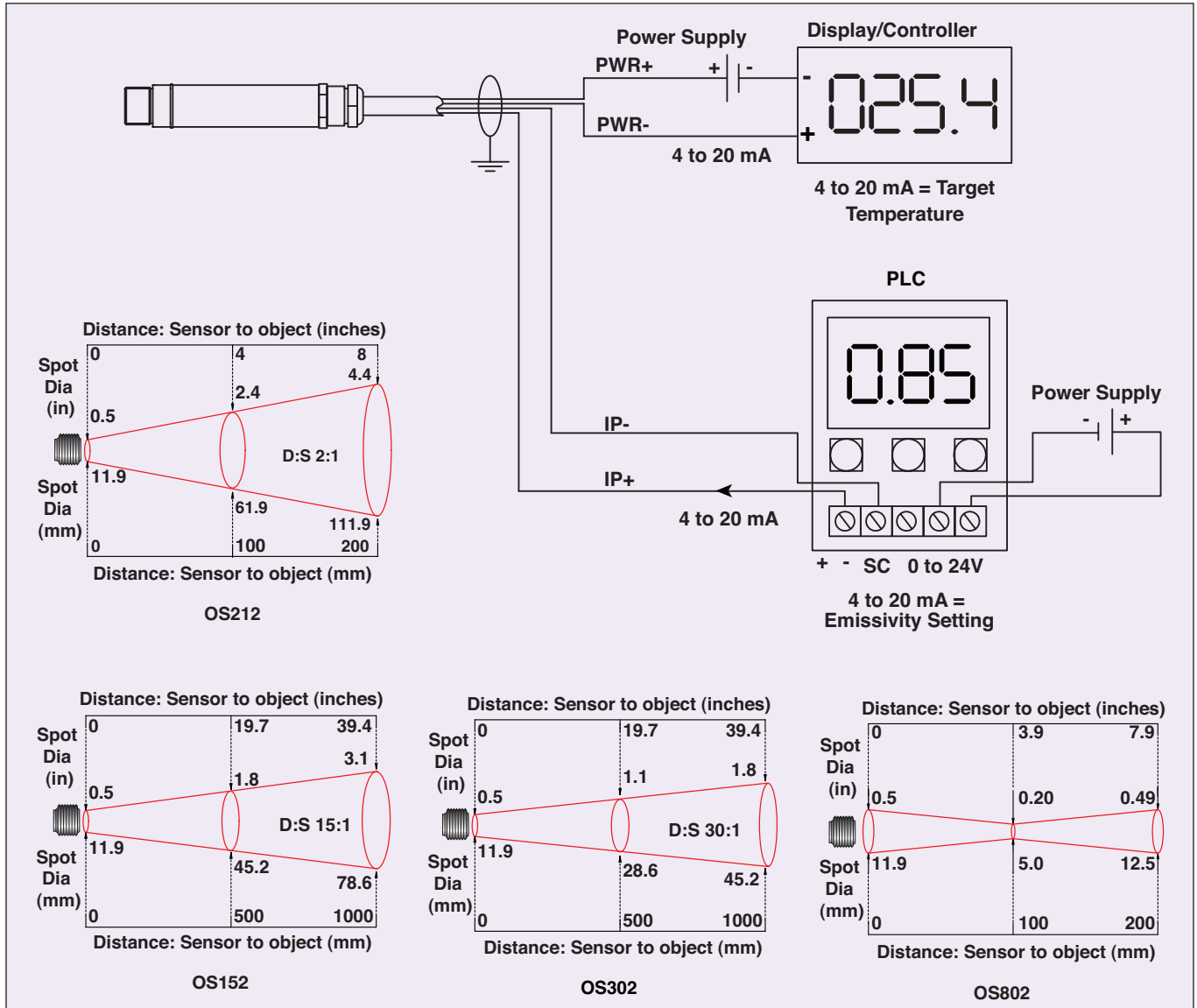
### Environmental

**Rating:** IP65

**Ambient Temperature Range:** 0 to 70°C (312 to 158°F)

**Relative Humidity:** 95% max non-condensing

## Wiring Diagram and Distance: Spot Ratios





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<b>To Order (Specify Model Number)</b>				
Model No.		Optics	Temperature Range	Output with Adjustable Emissivity
OS212-LT		2:1	-20 to 100°C (-4 to 212°F)	4 to 20 mA
OS212-MT		2:1	0 to 250°C (32 to 482°F)	4 to 20 mA
OS152-LT		15:1	-20 to 100°C (-4 to 212°F)	4 to 20 mA
OS152-MT		15:1	0 to 250°C (32 to 482°F)	4 to 20 mA
OS152-HT		15:1	0 to 500°C (32 to 932°F)	4 to 20 mA
OS302-LT		30:1	-20 to 100°C (-4 to 212°F)	4 to 20 mA
OS302-MT		30:1	0 to 250°C (32 to 482°F)	4 to 20 mA
OS302-HT		30:1	0 to 500°C (32 to 932°F)	4 to 20 mA
OS802-LT		Close-focus	-20 to 100°C (-4 to 212°F)	4 to 20 mA
OS802-MT		Close-focus	0 to 250°C (32 to 482°F)	4 to 20 mA
OS802-HT		Close-focus	0 to 500°C (32 to 932°F)	4 to 20 mA

Comes complete with sensor head, 1 m (3.3') cable and operator's manual.

**Ordering Examples:** OS212-MT, 2:1 optics, 0 to 250°C (32 to 482°F) temperature range, 4 to 20 mA output, adjustable emissivity.

OS302-HT, 30:1 optics, 0 to 500°C (32 to 932°F) temperature range, 4 to 20 mA output, adjustable emissivity. **OCW-3, OMEGACARE<sup>SM</sup>** extends standard 2-year warranty to a total of 5 years.

### Options (Not Field Installable)

Suffix	Description
-WC	For air/water cooled jacket (includes air purge collar) must be ordered with sensor; cannot be retrofitted
-CE(*)	Cable extended, for uncooled PE sensor, 30 m (98') max total cable length
-CEHT(*)	Cable extended, high temperature, for cooled PE sensor, 30 m (98') max total cable length

\* 1 m (3.3') cable is included as standard on every sensor. Extended cable is added to that length, add suffix to model number. Insert cable length in meters.

### Accessories

Model No.	Description
OS210-PT	Tune emissivity adjuster, 24 Vdc input, 4 to 20 mA output
OS210-FBS	Fixed bracket for compact sensors
OS210-ABS	Adjustable bracket for compact sensors
OS210-APSW	Air purge collar for compact 2:1 sensors
OS210-APSN	Air purge collar for compact 15:1, 30:1 and close-focus sensors
OS210-LSTS	Laser sighting tool for compact sensors
CAL-3-IRT†	NIST-traceable calibration

### Power Supplies

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Model No.	Description
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
TX8-100	Power/output cable, 30 m (100')



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Manchester, England  
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Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

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