

# Miniature Low-Cost Non-Contact Infrared Temperature Sensor/Transmitter



OS136A miniature stainless steel sensor/transmitter with NEMA 4 housing shown actual size.

Each unit includes 2 hex mounting nuts, 1.8 m (6') shielded cable and operator's manual.

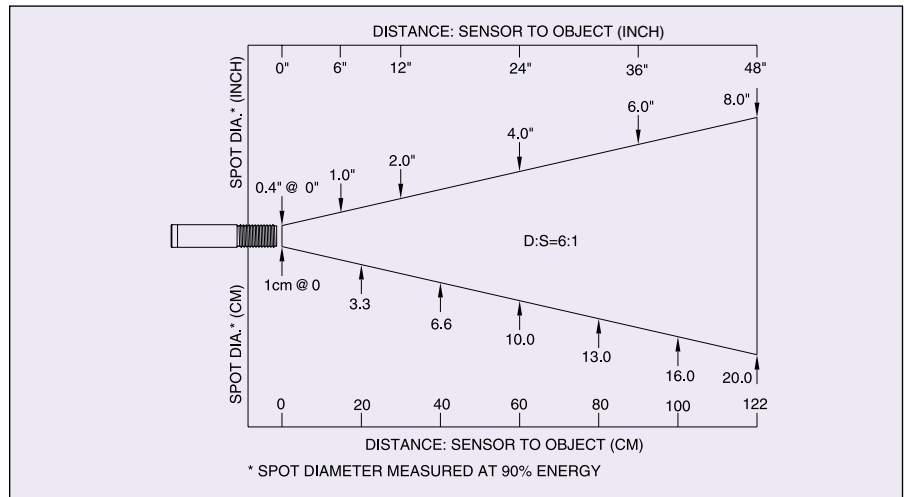
## OS136A



Optional

- ✓ **2 Temperature Ranges Available:**  
 OS136A-1: -18 to 202°C (0 to 400°F)  
 OS136A-2: 149 to 538°C (300 to 1000°F)
- ✓ **Sensor and Transmitter Combined**
- ✓ **Packaged into a 19 mm (¾") OD by 89 mm (3.5") Long Stainless Steel Housing**
- ✓ **Optical Field of View: 6 to 1**
- ✓ **Fixed Emissivity of 0.95**
- ✓ **NEMA 4 (IP66) Rated Housing**
- ✓ **4 to 20 mA, 0 to 5 Vdc, 0 to 10 Vdc, Type K Thermocouple, 10 mV/Degree Analog Outputs Available**
- ✓ **Makes Fast and Accurate Measurements**

The Omega miniature, low-cost, high-performance infrared sensor/transmitter model OS136A features a 19 mm (¾") OD by 89 mm (3.5") long stainless steel NEMA 4 (IP66) housing. This mini transmitter is ideal for applications that require measuring temperature in hard-to-reach, confined, or harsh environments. The OS136A comes with a 1.8 m (6') shielded cable for power and output connections. Models feature industry standard outputs that provide easy interfacing directly to all meters, controllers, data loggers, recorders, computer boards, and PLCs. The fixed emissivity of 0.95 allows for quick and easy measurement requiring no adjustment during installation and use.



## Specifications

### Temperature Range:

**OS136A-1:** -18 to 202°C (0 to 400°F)

**OS136A-2:** 149 to 538°C (300 to 1000°F)

### Accuracy @ 22°C (72°F) Ambient:

**OS136A-1:** 3% of rdg or 4.4°C (8°F), whichever is greater

**OS136A-2:** 3% of rdg or 5.5°C (10°F), whichever is greater from 185 to 510°C (365 to 950°F)

### Repeatability:

1% of rdg  
 Optical Field of View: 6 to 1 (distance to spot size)

### Spectral Response:

5 to 14 microns  
 Response Time: 150 msec, 0 to 63% of final value

### Emissivity:

Fixed at 0.95

### Analog Output:

**MA:** 4 to 20 mA

**V1:** 0 to 5 Vdc

**V2:** 0 to 10 Vdc

**K:** Type K thermocouple, compensated

**MVC:** 10 mV/°C

**MVF:** 10 mV/°F

**Output Load Requirements:**

- Min Load (0 to 5 Vdc): 1 kΩ
- Min Load (0 to 10 Vdc): 2 kΩ
- Max Load (4 to 20 mA):  
(Power supply – 4) / 20 mA
- Min Load (10 mV/Deg): 10 kΩ
- Min Load (K T/C): 100 kΩ

**Operating Ambient Temperature:**

- No Water Cooling: 0 to 70°C  
(32 to 158°F)
- With Water Cooling (OS136-WC):  
0 to 200°C (32 to 392°F)
- With Air Cooling (OS136-WC):  
0 to 110°C (32 to 230°F)

**Operating Relative Humidity:**

- Less than 95% RH, non-condensing
- Water Flow Rate for OS136-WC:**  
0.25 GPM, room temperature, minimum
- Air Flow Rate for OS136-WC:** 5 CFM  
(2.4 liters/sec)
- Warm-Up Period:** 1 to 2 minutes

- Thermal Shock:** About 30 minutes for  
25°C abrupt ambient temperature change
- Air Flow Rate for Air Purge Collar:**  
1 CFM (0.5 liters/sec)

**Transmitter Housing:**

- 316 SS, NEMA 4 (IP66) rated
- Power:** 12 to 24 Vdc @ 50 mA
- Dimensions:** 19 OD x 89 mm L  
(0.75 x 3.5")
- Weight:** 181 g (0.40 lb)

**Laser Sight Accessory Specifications**

- Laser Wavelength (Color):**  
630 to 670 nm (red)
- Operating Distance:** Up to 9.1 m (30')
- Max Laser Power Output:**  
Less than 1 mW @ 22°C ambient
- Safety Classification:**  
Class 2 EN60825-1/11.2001
- FDA Classification:** Class II laser  
product; complies with 21 CFR 1040.10
- Laser Beam Diameter:**  
Less than 5 mm (0.2")
- Beam Divergence:** Less than 2 mrad

Connect your OS136A to a precision controller CN8DPT, sold separately.  
For additional meters visit Omega.

CN8DPT shown actual size.



**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 (included)

**Caution and Certification Label:**

- Located on the head sight circumference
- Identification Label:** Located on the  
head sight circumference
- Aperture Label:** Located on the head  
sight circumference
- Dimensions:**  
38 D x 50.8 mm L (1.5 x 2")

**To Order**

Model No.	Description
OS136A-(*)-K	Infrared transmitter with Type K thermocouple output
OS136A-(*)-MV-F	Infrared transmitter with 10 mV/°F output
OS136A-(*)-MV-C	Infrared transmitter with 10 mV/°C output
OS136A-(*)-MA	Infrared transmitter with 4 to 20 mA output
OS136A-(*)-V1	Infrared transmitter with 0 to 5 Vdc output
OS136A-(*)-V2	Infrared transmitter with 0 to 10 Vdc output

Comes complete with 2 hex mounting nuts, 1.8 m (6') shielded cable and operator's manual.  
\* Insert "1" for -18 to 202°C (0 to 400°F); insert "2" for 149 to 538°C (300 to 1000°F).  
**Ordering Examples:** OS136A-1-MA, infrared transmitter with temperature range of -18 to 202°C (0 to 400°F) and 4 to 20 mA output.  
OS136A-1-V1 and CN8DH33, infrared transmitter with temperature range of -18 to 202°C (0 to 400°F), 0 to 5 Vdc output, and 1/2 DIN temperature controller.



**Accessories**

Model No.	Description
OS100-MB	Mounting bracket
OS100-AP	Air purge collar
OS136-WC	Water/air cool jacket
OS100-LS†	Laser sighting
TX4W-50	4-conductor shielded high-temp cable, 15 m (50')
TX4-100	4-conductor shielded 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

†OS136-LS laser sighting: 1 unit suitable for aligning multiple heads. Used during installation only.  
**Ordering Example:** OS100-MB, mounting bracket.