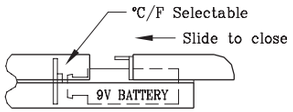
Battery Installation

The OS681 requires a standard 9-volt battery.

The sensor only requires power during operation; therefore, the battery should last several months with average use.



Low Battery Indication

A decimal point to the right of the center digit indicates low battery power.

Subzero Measurements

A decimal point to the left of the center digit indicates a subzero temperature reading.

Lens Cleaning

Debris on the lens may cause obstruction and reduce the accuracy of the OS681. If this occurs, either wipe the lens with a Q-tip (moistened with water only) or blow off the loose particles with clean compressed air.

Specifications for OS681 Series:

Temperature Range:	0 to 600°F (-18° to 315°C) or -67 to 260°F (-55° to 125°C)
Resolution:	1°F (1°C)
Accuracy:	± 2% of reading or 3°F (2°C), ± 1 digit, whichever is greater
Response Time:	1 second
Target Size/ Field of View :	3:1 optics ratio with a 1" minimum target
Repeatability:	± 0.5% of reading, plus one digit
Power Source:	9-volt battery included
Wavelength:	8 to 14 micron
Operating Temperature:	50° to 125°F (10° to 52°C)
Dimensions:	7.26" x 1.7" x 0.75"
Weight:	2.7 oz., 75 grams (w/o battery)
Emissivity:	Fixed at 0.95

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the compamy will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, human applications.

User's Guide

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M2550/0608

Introduction

Every object in the universe radiates energy in the infrared spectrum. Infrared energy falls between visible light and radio waves in the electromagnetic spectrum, which includes ultraviolet, gamma and x-rays.

Infrared temperature measurement technology is not new. It has been used successfully in aerospace laboratories as well as manufacturing, maintenance and quality control processes for more than 30 years.

The OS681 Series

The OS681 is a hand-held, battery-operated sensor that safely and accurately measures temperature using a non contact infrared technology. Operation of the OS681 is simple.

Just point the sensor at the desired target and press the "on" button for a temperature reading no contact is ever needed. The OS681 has the first temperature response time of 1 second and a continuous reading feature, which is achieved by holding down the "on" button. The temperature reading is held on the display for 60 seconds after the release of the "on" button.

The Infrared System

Infrared sensors consist of optics, detector, display and output. The OS681 uses special optics to gather infrared energy from a target surface and focuses this energy onto a custom detector. The detector then converts the infrared energy into an electrical signal proportionate to the temperature of the target surface being measured. The output is a digital temperature measurement in degrees Fahrenheit or Centigrade within milliseconds.

Calculating Distance

The OS681 has a distance-to-target ratio (D/T) of 3:1 and measures the emitted energy of a target one-third the size of the working distance.

For example, if the distance is 3 inches, the diameter of the measured area is 1 inch.

Precautions

To ensure accurate temperature readings, it is important to prevent contact or near contact of the sensing lens to extreme hot or cold sources. Exposure of more than a few seconds may cause the signal to drift several degrees.

Emissivity

Emissivity is a characteristic of a target surface and is the relative ability of that surface to emit energy.

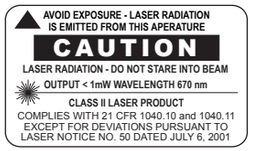
The OS681 is preset to an emittance value of 0.95-the value of most Organic substances. This includes such things as wood, cloth, plastics and water. Highly reflective materials with smooth polished surfaces have emittance values much lower than 1.0. To compensate for emissivity when measuring such materials, we recommend using flat black paint or attaching black tape to the target to soften the reflectiveness.

Laser Sight Option

The laser is located on the front of the sensor next to the optics and is activated by pressing the "on" button. The laser will produce a red spot from sighting the measured target.

CE Certification

This instrument conforms to the following standards:
EN50081-1:1992, Electromagnetic Emissions
EN50082-1:1992, Electromagnetic Susceptibility
Performance of the unit may degrade while in the presence of these electromagnetic fields.



CAUTION LABEL
Caution and apeture label located on the backside of the unit.
011-0011 REV B 3/07