OS423HT-LS
Non-contact Infrared Thermometer with White LED Flashlight
OS423HT-LS (with white LED Flashlight)  

**Thermometer Operating Instructions**

For Model with thermocouple socket

The thermometer is a non-contact infrared thermometer. There are many mathematical modes for the Infrared function. Please remember to keep away from children and don’t use it for safety related applications or for medical use or use on humans.

Simply aim the thermometer at the measure target with Lens (8) and press Meas. key (6) to display the surface temperature. The Distance:Spot is 35:1. The laser circle/dot points are the reference for the target spot size. Please make sure the target area is within the field of view.

**FUNCTION**

- **Press Emissivity key (1) for setting the emissivity**
  - Press Emissivity key (1), then press Up key (4) or Down key (2) to set the emissivity, then press Mode key (5) to confirm it. The emissivity can be changed from 0.10 (10E) to 1 (100E).

- **Press Mode key (5) for scrolling more display function as follows.**
  - This will show the emissivity data. (The default emissivity is 0.95.)
  - Press Mode key (5) for the Maximum (MAX), Minimum (MIN), Different between MAX and MIN (DIF) and Average (AVG) modes. During the measurement, the special modes reading will be displayed beside the mode icon.
  - Press Up key (4) or Down key (2) key to change the High Alarm (HAL) or Lo Alarm (LAL), then press Meas. key (6) to confirm it. For example: When the reading 26.9°C < LAL 27°C, the Low icon will flash and you will hear a beep sound.
  - Connect the thermocouple with Thermocouple socket (11) and put the probe in/on the target, the thermometer will display the temperature automatically without pressing any button. To see the minimum or maximum data during the probe measurement, please hold down the Up key (4) or Down key (2).
  - After measuring high temp, the probe may remain HOT for a while.

**ADD VALUE**

- **In MAX, MIN, DIF, AVG mode:**
  - Press Up key (4) for LOCK mode ON/OFF. The lock mode is particularly useful for continuous monitoring of temperatures for up to 60 minutes.
  - Press Down key (2) for °C or °F transferred.

- **In all modes: First hold on the Meas. key (6) and press Up key (4) for backlight function ON/OFF.**
  - and press Down key (2) for laser function ON/OFF. (The flash light is turned on at the same time as the laser)

---

**U.S. PAT. B1 5,368,392; 5,524,984; 5,727,880; 5,823,678; 5,823,679; 6,123,453; 6,267,500 B1; 6,341,891 B1; 6,377,400 B1; 6,540,398 B2; 6,614,830 B1; 6,633,434 B2; 6,659,639; 6,901,089 B1, 7,052,175 / Canada 2,114,806; 2,317,734 / France 2,756,920; 2,773,213; 2,773,214 / Germany G 94 22 197.9; G 94 22 203.7, 19828454/ Holland 1007752; / U.K. Registered 2,237,493; 2,320,324; 9726133.3 / EPO 0 644,408 B2; EPO 1 085 307 A1, EPO 1 065 484 B1, EPO 1 065 483 B1. Other U.S. and International Patents Pending.**
1. WHEN DEVICE IS IN USE, DO NOT LOOK DIRECTLY INTO THE LASER BEAM – PERMANENT EYE DAMAGE MAY RESULT.

2. USE EXTREME CAUTION WHEN OPERATING THE LASER.

3. NEVER POINT THE DEVICE TOWARDS ANYONE’S EYES.

4. KEEP OUT OF REACH OF ALL CHILDREN.

STORAGE & CLEANING
The IR should be stored at room temperature. The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol. Allow the lens to fully dry before using the thermometer. Do not submerge any part of the thermometer.

LCD ERROR MESSAGES
The thermometer incorporates visual diagnostic messages as follows:

- ‘Hi’ or ‘Lo’ is displayed when the temperature being measured is outside of the settings of HAL and LAL.
- ‘Er2’ is displayed when the thermometer is exposed to rapid changes in the ambient temperature. ‘Er3’ is displayed when the ambient temperature exceeds 0°C (32°F) or +50°C (122°F). The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.
- Error 5~9, for all other error messages it is necessary to reset the thermometer. To reset it, wait for auto power off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on.

‘Hi’ or ‘Lo’ is displayed when the temperature being measured is outside of the measurement range.

BATTERIES
The thermometer incorporates visual low battery indication as follows:

- ‘Battery OK’: measurements are possible
- ‘Battery Low’: battery needs to be replaced, measurements are still possible
- ‘Battery Exhausted’: measurements are not possible

⚠️ When the ‘Low Battery’ icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries.
Please note: It is important to turn the instrument off before replacing the battery otherwise the thermometer may malfunction.
⚠️ Dispose of used battery promptly and keep away from children.

SPECIFICATION

<table>
<thead>
<tr>
<th>Item</th>
<th>Non-contact Infrared Scan function</th>
<th>Thermocouple Probe Scan function (K type; probe not included.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>-60 to +1000°C (-76 to +1832°F)</td>
<td>-64 to +1400°C (-83.2 to +2552°F)</td>
</tr>
<tr>
<td>Operating Range</td>
<td>0 to +50°C (32 to +122°F)</td>
<td></td>
</tr>
<tr>
<td>Accuracy (Tobj=15~35°C, Tamb=25°C)</td>
<td>±1.0°C (1.8°F)</td>
<td>+/-1% of reading or 1°C (1.8°F) whichever is greater (Test under Tamb=23±6°C)</td>
</tr>
<tr>
<td>Accuracy (Tobj=-33~1000°C, Tamb=23±3°C)</td>
<td>±2% of reading or 2°C (4°F) whichever is greater</td>
<td></td>
</tr>
<tr>
<td>Emissivity Range</td>
<td>0.95 default – adjustable 0.1 to 1 step .01</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1°C/0.1°F at -83.2 to 999.9(°C/°F), otherwise 1°C/1°F</td>
<td></td>
</tr>
<tr>
<td>Response Time (90%)</td>
<td>1sec</td>
<td></td>
</tr>
<tr>
<td>Distance:Spot</td>
<td>35:1</td>
<td></td>
</tr>
<tr>
<td>Battery Life</td>
<td>Typ.180, min 140 hours continuous use (Alkaline, without Laser and Back Light.)</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>47.0 x 154.9 x 193.1mm (1.8 x 6.0 x 7.6 inch)</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>344.8 grams (12.16 oz) including batteries (AAA*2pcs)</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ EMC/RFI: Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.
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, whether verbal or written. OMEGA warrants only that the parts manufactured by the company 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 here-in 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, incidential 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), shall OMEGA be liable for consequential, incidental or special damages. 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.

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. OMEGA is a trademark of OMEGA ENGINEERING, INC.

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. OMEGA is a trademark of OMEGA ENGINEERING, INC.

© Copyright 2010 OMEGA ENGINEERING, INC. All rights reserved. This document may not be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of OMEGA ENGINEERING, INC.