OM-CP-OCTTEMP2000
8-Channel Thermocouple Datalogger with LCD Display
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.
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Section 1: Overview

1.1 Other Documentation
Other documents which may be of interest to you are the Software Operating Manual and Data Logger Quick Start Guide. To obtain the most current versions of both of these documents please visit our website (www.omega.com).

1.2 Contacting Us
For additional sales, service, and support you may contact our office directly:

OMEGA Engineering, INC.
One Omega Drive
Stamford, Connecticut 06907-0047
P.O. Box 4047

(800)-848-4286 or (203)-359-1660
Fax: (203)-359-7700

info@omega.com
Section 2: Introducing the OM-CP-OCTTEMP2000

1.2 Device Overview

Keypad Functions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="OK Key" /></td>
<td>OK Key</td>
</tr>
<tr>
<td><img src="image" alt="Cancel Key" /></td>
<td>Cancel Key</td>
</tr>
<tr>
<td><img src="image" alt="Up/Down Directional Keys" /></td>
<td>Up/Down Directional Keys</td>
</tr>
<tr>
<td><img src="image" alt="Left/Right Directional Keys" /></td>
<td>Left/Right Directional Keys</td>
</tr>
</tbody>
</table>
2.2 Display Overview

Status Indicators

<table>
<thead>
<tr>
<th>Status Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Battery Power Icon" /></td>
<td>Battery Power (Full, Half-full, Empty)</td>
</tr>
<tr>
<td><img src="image2" alt="Memory Remaining Icon" /></td>
<td>Memory Remaining (Empty, Half-full, Full)</td>
</tr>
<tr>
<td><img src="image3" alt="Device Running Icon" /></td>
<td>Device is running</td>
</tr>
<tr>
<td><img src="image4" alt="Device Stopped Icon" /></td>
<td>Device is stopped</td>
</tr>
<tr>
<td><img src="image5" alt="Delay Start Icon" /></td>
<td>Delay Start</td>
</tr>
<tr>
<td><img src="image6" alt="Push-Button Start Icon" /></td>
<td>Push-button (Manual) Start</td>
</tr>
<tr>
<td><img src="image7" alt="Device Reset Icon" /></td>
<td>Device reset has occurred</td>
</tr>
<tr>
<td><img src="image8" alt="External Power Icon" /></td>
<td>External power present</td>
</tr>
</tbody>
</table>
2.3 Specifications

Internal Temperature Channels
- Range: -20 to +60°C
- Resolution: 0.1°C
- Accuracy: ±0.5°C (0 to +50°C)

Thermocouple Channels
- Types: J, K, T, E, R, S, B, and N
- Connection: Female sub-minature (SMP)
- Cold Junction Compensation: Automatic, based on internal channel
- Maximum Thermocouple Resistance: 1000Ω < 100Ω recommended

Thermocouples:

<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>J</td>
<td>-200 to +760°C</td>
<td>0.1°C</td>
<td>± 0.5°C</td>
</tr>
<tr>
<td>K</td>
<td>-200 to +1370°C</td>
<td>0.1°C</td>
<td>± 0.5°C</td>
</tr>
<tr>
<td>T</td>
<td>-200 to +400°C</td>
<td>0.1°C</td>
<td>± 0.5°C</td>
</tr>
<tr>
<td>E</td>
<td>-200 to +980°C</td>
<td>0.1°C</td>
<td>± 0.5°C</td>
</tr>
<tr>
<td>R</td>
<td>-50 to +1760°C</td>
<td>0.1°C</td>
<td>± 2.0°C</td>
</tr>
<tr>
<td>S</td>
<td>-50 to +1760°C</td>
<td>0.1°C</td>
<td>± 2.0°C</td>
</tr>
<tr>
<td>B</td>
<td>+50 to +1820°C</td>
<td>0.1°C</td>
<td>± 2.0°C</td>
</tr>
<tr>
<td>N</td>
<td>-200 to +1300°C</td>
<td>0.1°C</td>
<td>± 0.5°C</td>
</tr>
</tbody>
</table>

Dot-Matrix LCD
- Dimensions: 2.5” x 1.375” (63mm x 35mm)
- Text: Configurable channel text size
- Indicators: Power, status, memory
- Backlight: Configurable with auto shut-off and contrast adjustment

Start/Stop Modes
- Software programmable start time and date, up to six months in advance, or manual (push-button) start.
- Programmable stop time.

Memory
- 500,000 readings per channel with all channels enabled; 4,000,000 total readings; software configurable memory wrap

Reading Rate
- 4 readings per second (4Hz) up to 1 reading every 24 hours
<table>
<thead>
<tr>
<th><strong>Calibration</strong></th>
<th>Digital calibration through software. Calibration date automatically recorded within device. NIST traceable certificate available.</th>
</tr>
</thead>
</table>
| **Power Supply**        | Primary Source: 9V lithium or alkaline battery, user replaceable  
                             Secondary Source: 7.5 - 24V DC external, 100mA max |
| **Battery Life**        | Eighteen month battery life with display off. Three months typical with continuous display use. |
| **Data Format**         | Time and date stamped, °C, °F, K, °R, µV, mV, V |
| **Time Accuracy**       | ±1 minute per month |
| **Computer Interface**  | PC serial or USB (interface cable required); 115,200 baud |
| **Software**            | Windows 95/98/ME/NT/2000/XP/Vista based software |
| **Operating Environment** | -20 to +60°C, 0 to 95%RH non-condensing |
| **Dimensions**          | 7.24” x 2.7” x 1.14” |
| **Weight**              | 15oz. |
| **Enclosure**           | Black anodized aluminum |
Section 3: Device Function

3.1 Channel Options
Each of the OM-CP-OCTTEMP2000’s channels have several options that are configurable by the user through the device’s display screen menus and the software.

3.2 Show or Hide Channels on the Home Screen
The user may choose to either show or hide channels on the home screen.

To change channel visibility from the Home Screen:

1. Press \(\uparrow\) to view first channel screen
2. Use \(\downarrow\) to view additional channels
3. On desired channel screen use \(\uparrow\) \(\downarrow\) to highlight Visible
4. Use \(\uparrow\) \(\downarrow\) to choose Show or Hide
5. Press \(\times\) to return to the Home Screen

——OR——

1. Use \(\uparrow\) \(\downarrow\) to highlight desired channel
2. Press \(\times\) to view channel screen
3. Use \(\uparrow\) \(\downarrow\) to highlight Visible
4. Use \(\uparrow\) \(\downarrow\) to choose Show or Hide
5. Press \(\times\) to return to the Home Screen

3.3 Change Channel Display Size
Channels may be viewed in a number of different sizes. The smallest size allows for an overview of several channels at once, while the largest gives at-a-glance access to one or two channels.

![Small Font](image)

![Medium Font](image)
To change channel display size from the **Home Screen**:
1. Press ✅ to enter the **Main Menu**
2. Use ▲ ▼ to highlight **Setup Menu**
3. Press ✅ to enter the **Setup Menu**
4. Use ▲ ▼ to highlight **Channel Size**
5. Use ◀ ▶ to choose the desired channel size
6. Press ✅ once to return to the **Main Menu**
7. Press ✅ again to return to the **Home Screen**

### 3.4 Change Channel Units
*Channels can be customized to display readings in a variety of convenient units. Units available for selection will vary according to channel type.*

---

**Note:** Changing display units will not affect logged data.

To change channel display from the **Home Screen**:
1. Press ✅ to view first **channel screen**
2. Use ◀ ▶ to view additional channels
3. On desired channel screen use ▲ ▼ to highlight **Units**
4. Use ◀ ▶ to choose the desired unit option
5. Press ✅ to return to the **Home Screen**

— OR —

1. Use ▲ ▼ to highlight desired channel
2. Press ✅ to view **channel screen**
3. Use ▲ ▼ to highlight **Units**
4. Use ◀ ▶ to choose the desired unit option
5. Press ✅ to return to the **Home Screen**

**Note:** Hit X to update all channels.
3.5 Statistics
Statistical information is generated based on the data measured by each channel.

Note: Information is only generated while the data logger is running and the reset does not affect statistics on download.

3.6 View Channel Statistics
Minimum, maximum, and average values are calculated for each channel and displayed in the statistics screens.

To view channel statistics from the Home Screen:
1. Use \[ \rightarrow \] to view desired statistic screen
2. In statistics screen use \[ \uparrow \downarrow \] to view statistics for each channel
3. Use \[ \leftarrow \rightarrow \] to scroll back to the Home Screen

3.7 Clear Channel Statistics
Statistics may be cleared and reset at any time.

To clear channel statistics from the Home Screen:
1. Press \[ \square \] to enter the Main Menu
2. Use \[ \uparrow \downarrow \] to highlight Clear Statistics
3. Press \[ \square \] to select Clear Statistics
4. Press \[ \square \] to confirm statistics clear, \[ \square \] to cancel

3.8 Time and Date Information
Current time and date information is available on the LCD. System time is automatically synchronized with your computer’s clock.
To view time and date information from the Home Screen:
1. Press \(\) to enter the Main Menu
2. Use \(\) to highlight Clock
3. Press \(\) to select Clock and view time and date information

3.9 Manual (Push-button) Start
Devices set to start in Manual (Push-button) mode can be started through the device’s display screens at the user’s convenience.

To manually start device from the Home Screen:
1. Press \(\) to enter the Main Menu
2. Use \(\) to highlight Start Device
3. Press \(\) to select Start Device
4. Press \(\) to confirm device start, press \(\) to cancel
Section 4: Device Menus

4.1 Device Status Menu

Information such as current recording status, reading rate, stop date and time, and calibration information can be found in the Device Status Menu.

To access the Device Status Menu from the Home Screen:

1. Press \( \Box \) to enter the Main Menu
2. Use \( \uparrow \downarrow \) to highlight Status
3. Press \( \Box \) to enter the Device Status Menu

**Status** – Device’s current recording status.
- Running - device is actively recording data
- Stopped - device is not actively recording data
- Delay - device is in Delay Start mode (start scheduled for future)
- Manual - device is in Manual (push-button) Start mode

**Memory Left** – Percentage of memory available to store readings

**Readings** – Number of readings currently stored in device’s memory

**Rate** – Reading rate (configurable using data logger software)

**Wrap** – Memory wrap (configurable using data logger software)
- Enabled - when memory is full device will overwrite oldest data
- Disabled - when memory is full device will stop recording data

**Start Date/Time** – Date and time device began recording data

**Stop Date/Time** – Date and time device will stop recording data (due to full memory or other user configured parameter)

**Display** – Options for display visibility
- Use \( \uparrow \downarrow \) to select
- Auto - display turns off after two minutes of inactivity
- On - display always on

**Backlight** – Options for use of display backlight
- Use \( \uparrow \downarrow \) to select
- Auto - backlight turns off after five seconds of inactivity
- On - backlight always on
- Off - backlight always off

**LED** – Options for use of status LEDs
- Use \( \uparrow \downarrow \) to select
- Enabled - status LEDs flash to indicate reading status
- Disabled - LEDs off

**Contrast** – Set screen contrast value
- Use \( \uparrow \downarrow \) to set desired contrast value

**Battery Type** – User defined based on the type of battery currently installed in the device
- Use \( \uparrow \downarrow \) to select Lithium or Alkaline battery

**Battery Life** – Percentage of battery power remaining

**Battery Voltage** – Voltage supplied to the device by the battery

**External Power** – Presence of external power supply

**External Voltage** – Voltage supplied to the device by external power supply

**Display** – Options for display visibility
- Use \( \uparrow \downarrow \) to select
Auto - display turns off after two minutes of inactivity
On - display always on

**Backlight** – Options for use of display backlight

- Use < > to select
- Auto - backlight turns off after five seconds of inactivity
- On - backlight always on
- Off - backlight always off

**LED** – Options for use of status LEDs

- Use < > to select
- Enabled - status LEDs flash to indicate reading status
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**Contrast** – Set screen contrast value

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**Battery Type** – User defined based on the type of battery currently installed in the device

- Use < > to select Lithium or Alkaline battery

**Battery Life** – Percentage of battery power remaining

**Battery Voltage** – Voltage supplied to the device by the battery

**External Power** – Presence of external power supply

**External Voltage** – Voltage supplied to the device by external power supply

**Reading Date/Time** – Date and time of last recorded reading

**Cal Date** – Date of last device calibration

**Cal Due** – Date device is due for recalibration

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**Note:** It is important to keep your device properly calibrated to ensure accurate readings. Contact Omega for further information regarding calibration services.

### 4.2 Device Setup Menu

* Functions in the Device Setup Menu allow you to change home screen, display, and battery options.*

To access the **Device Setup Menu** from the **Home Screen**:

1. Press < > to enter the **Main Menu**
2. Use ▼ to highlight **Setup Menu**
3. Press < > to enter the **Setup Menu**

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**Channel Size** – Options for channel font size displayed on Home Screen.

- Use < > to select font size
- Small - up to six channels displayed on Home Screen
- Medium - up to three channels displayed on Home Screen
- Large - up to two channels displayed on Home Screen

**Update Screen** – Frequency of Home Screen Update

- Use < > to select
- Auto - Home Screen updates at user defined interval
- Reading - Home Screen updates each time a reading is taken

**Update After** – User defined Home Screen update frequency

- Use < > to set desired frequency

**Auto-Scroll** – When device is idle, screen view alternates between home and statistics screens

- Use < > to Enable/ Disable auto-scroll
Section 5: Software Features

This section details several features of the data logger software that are particularly useful with the OM-CP-OCTTEMP2000 device. For further information regarding the software, please visit www.omega.com.

5.1 Enable and Disable Channels

The user may choose to enable or disable channels using the software. Data from disabled channels will be visible on the LCD, but readings will not be recorded to the device’s memory. Disabling a thermocouple channel also disables its corresponding ambient temperature channel.

To enable/disable channels in the software:
1. In the Device drop down menu select Identify Device and Read Status to view the Device Status screen
2. Select the Device Detail tab
3. Click Enabled Channels to show the Enabled Channels Screen
4. To edit the enabled channels click Change
5. Check the boxes next to channels to be enabled
6. Click Save to save changes
7. Click OK to return to the Device Detail screen
8. Click OK to return to the software’s main screen

Notice that disabled thermocouple and ambient channels appear greyed-out on the Device Detail screen.
5.2 Name Channels

Each channel can be given an unique name for easy identification. Channel names are visible on the LCD and are used throughout the software and data files.

To name channels in the software:
1. In the Device drop down menu select Identify Device and Read Status to view the Device Status screen
2. Select the Device Detail tab
3. Click Channel Names to show the Channel Names Screen
4. To edit the channel names click Change
5. Type desired channel name in text box next to each channel
6. Click Save to save changes
7. Click OK to return to the Device Detail screen
8. Click OK to return to the software’s main screen
5.3 Change Device ID

Each OM-CP-OCTTEMP2000 can be given a device ID allowing for easy identification among multiple devices. Device IDs are displayed on the Home Screen of the LCD and are used throughout the software and data files.

To change Device ID in the software:
1. In the Device drop down menu select Start Device to view the Start Device screen
2. In the Device ID entry field type the desired Device ID name
3. Select other desired start functions
4. Click Start to start the device and save Device ID information

Device type and user defined Device ID are displayed on the Home Screen.
Section 6: Battery Information

⚠️ BATTERY WARNING

This data logger contains a lithium battery. Do not cut the battery open, incinerate, or recharge. Do not heat lithium batteries above the specified operating temperature.* Dispose of the battery in accordance with local regulations.

*See the individual specification sheets at www.omega.com.

Battery Replacement

This product does not have any user-serviceable parts except the battery which should be replaced periodically. The battery life is affected by battery type, ambient temperature, sample rate, sensor selection, off-loads and LCD usage. The device has a battery status indicator on the LCD. If the battery indication is low, or if the device seems to be inoperable, it is recommended that the battery be replaced.

To replace the battery, locate the battery compartment cover on the back of the unit. Remove the two (2) 3/32 hex screws and expose the battery compartment. Use the pull tab to remove battery from compartment. Remove the old 9V battery from the battery clips and replace with a new 9V battery. We recommend using 9V lithium battery. An alkaline battery is acceptable, but will yield a shorter battery life.
Section 7: Computer Interface:

1. Fully insert the male connector of the OM-CP-IFC110 interface cable into the female receptacle of the data logger. Insert fully the RS232 connector into the Serial Port.

   OR

2. Fully insert the male connector of the OM-CP-IFC200 interface cable into the female receptacle of the data logger. Fully insert the female USB connector into the USB. *(Please see the OMEGA Datalogger Software manual for further information)*

Note: Most OMEGA data loggers can use both OM-CP-IFC110 and OM-CP-IFC200 interface cables. For interface cable data logger clarification contact technical support at 1-800-848-4286.
OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 61 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal five (5) 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 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 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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- pH, Conductivity & Dissolved Oxygen Instruments