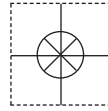


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# User's Guide

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## **OM-80 SERIES** **Miniature RFID Data Loggers**



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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.



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## Section 1 - Introduction

Please read this manual completely before unpacking and operating your miniature RFID data logger and reader system. It's important read and follow all notes, cautions, warnings and safety precautions before operating this device. "Device" refers to your data logger tag and reader.

Small, simple and affordable, the OM-80 series of data loggers measure and record temperature at a user specified interval ranging from 1 second to over 9 hours. The tag is equipped with a one-button, three-LED user interface. The start/status button can be used to activate the tag or check on the tag's status. Two of the LEDs are used to indicate whether the tag has measured temperatures that exceed programmable upper and lower temperature limits. The third LED is used to indicate the tag's status through a series of blinks.

The tag is configured using a reader and PC user software to operate in one of two modes:

### ALARM CLOCK MODE

The tag begins collecting data at a prescribed time.

### DELAY MODE

The tag begins collecting data after a specified delay from when the button is pressed.

Once the tag has finished collecting data or in the highly unlikely event that it loses power, the tag must be presented to reader/host software to download the data and re-configure it for another data collection run. The tag can only collect one series of temperature readings at time. The tag cannot be started, then halted and later re-started, without intervention of the host software.

The OM-80 reader/host software requires no programming skills, and enables you to effortlessly select a sample interval, specify a TAG ID, and initiate the start of data collection. The data logger can be configured and ready to use in just moments. In addition, all data can be saved in a format easily compatible with spreadsheet applications such as Microsoft Excel. It is our goal to bring you accurate, low-cost, easy-to-use data loggers that will easily integrate into your working environment. To better serve you and understand your needs, we welcome and appreciate your feedback.

### 1.1 Precautions

- This device is not designed for use in any medical or nuclear applications.
- Do not operate this device in flammable or explosive environments.
- Never operate with a power source other than the one recommended in this manual.
- Do not operate this device outside of the recommended use outlined in this manual.

#### NOTE:

There are no user serviceable parts inside your device. Attempting to repair or service your unit may void your warranty:

## 1.2 Safety Warnings and IEC Symbols

This device is marked with international safety and hazard symbols in accordance with IEC standards. It is important to read and follow all precautions and instructions in this manual before operating or commissioning this device as it contains important information relating to safety and EMC. Failure to follow all safety precautions may result in injury and or damage to your device. Use of this device in a manner not specified will void your warranty

### IEC Symbols Description



Caution, refer to accompanying documentation



EU's Waste Electrical and Electronic Equipment Compliance

Figure 1-1 IEC Symbols

OM-80 Series data loggers contain a lithium battery. Do not cut open, incinerate, heat above 85°C, recharge, submerge under water or other liquid or expose the battery to rain or excess humidity. Disposer per local regulations.

## 1.3 Statement on FCC and CE Marking

### 1.3.1 FCC Marking

FCC ID: WR3-OM80RD1 IC: 8205A-OM80RD1

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1.) This device may not cause harmful interference. 2.) This device must accept any interference received, including interference that may cause undesired operation.

### 1.3.2 CE Marking

It is the policy of OMEGA to comply with all worldwide safety and EMI/EMC 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. For additional information see Section 11 - Approvals & Regulatory Compliance.

## 1.4 Product Labeling

### 1.4.1 Tag Label

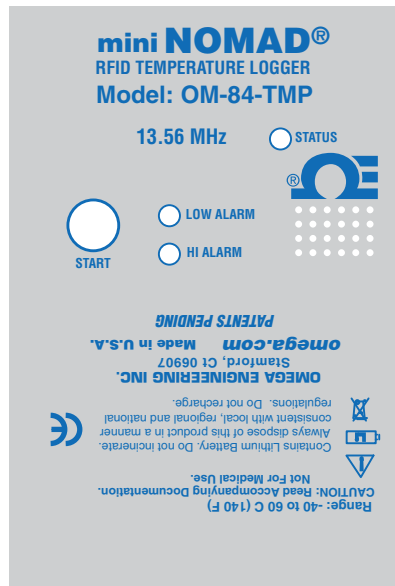


Figure 1-2. OM-84 Tag Label

### 1.4.2 Reader Labels

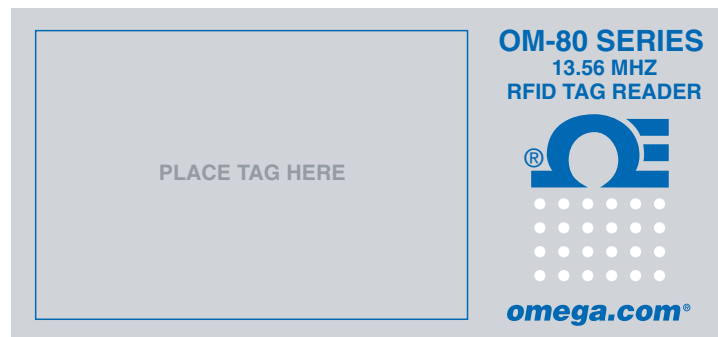


Figure 1-3. Reader Top Label OM-80-RD1

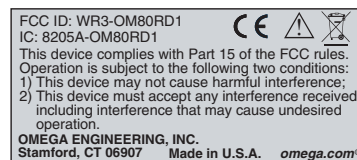


Figure 1-4. Reader Bottom Label OM-80-RD1

## Section 2 - Hardware

It is important that you read this manual completely and follow all safety precautions before operating this instrument.

### 2.1 Package Inspection

Remove the packing list and verify that you have received all your equipment. If you have any questions about the shipment, please call our Customer Service Department at 1-800-622-2378 or 203-359-1660. We can also be reached on the Internet at [omega.com](http://omega.com), e-mail: [cservice@omega.com](mailto:cservice@omega.com). When you receive the shipment, inspect the container and equipment for any signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

The carrier will not honor any damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

### 2.2 Included Items

The following items are supplied in the box.

**With kit OM-84-TMP-KIT:**

- 5 temperature logging tags with factory replaceable battery
- 1 Benchtop USB tag reader
- 1 User Software CD
- 1 USB cable
- 1 Soft carrying case
- 1 Permanent marker

**With kit OM-85-TMP-KIT:**

- 5 temperature logging tags in hard plastic case with field replaceable battery
- 1 Benchtop USB tag reader
- 1 User Software CD
- 1 USB cable
- 1 Soft carrying case
- 1 Permanent marker



## Section 3 – Software

### 3.1 Getting Started

The following program files are included on the OM-80 Series User Software CD supplied with kit. These files can also be downloaded from the omega.com website should you misplace your CD.

- OM-80 Series Data Logging Program
- OM-80 Series Manual (pdf format)
- OM-80 Series Data Sheet (pdf format)
- OM-80-RD1 USB drivers

### 3.2 Software Installation

Insert the CD ROM labeled OMEGASOFT® OM-80 Series Data Logging Software into your CD ROM drive. From the Windows Start menu, choose the Run command and type d:\setup into the Open field and click OK. If your CD ROM drive is not the D: drive, use the correct letter in the instructions above. You will then see the welcome window as shown below.



Figure 3-1. Welcome to the Omega Engineering Data Logging Application Setup Wizard

Click "Next" to continue the installation or "Cancel" to quit. When you click Next the license agreement window will appear.

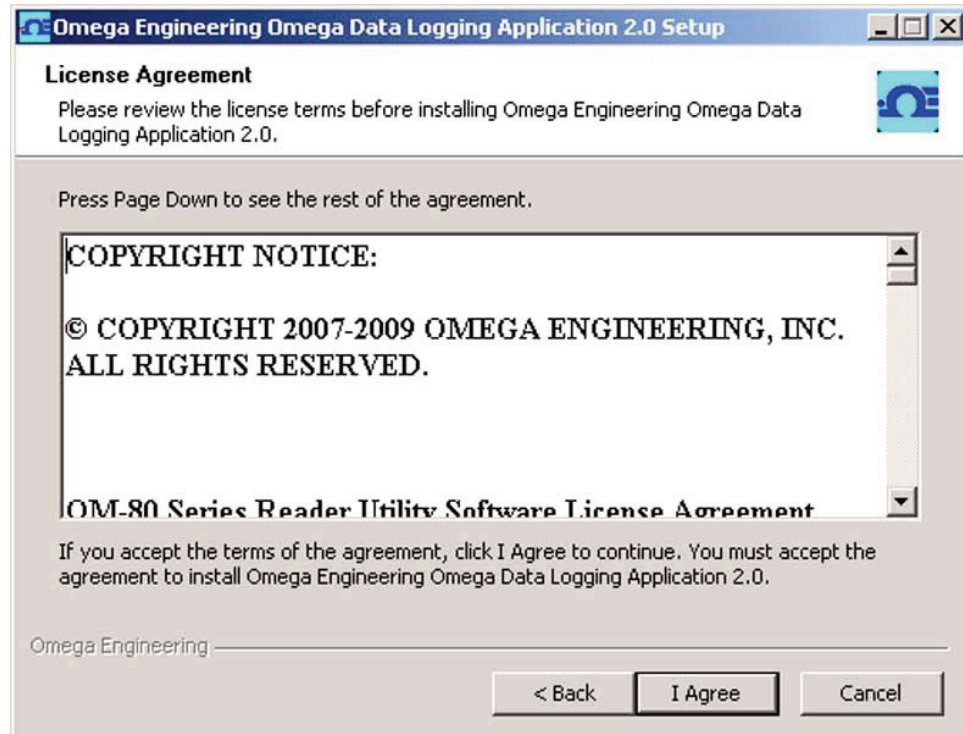


Figure 3-2. License Agreement

Click "I Agree" to continue the installation or "Cancel" to quit.

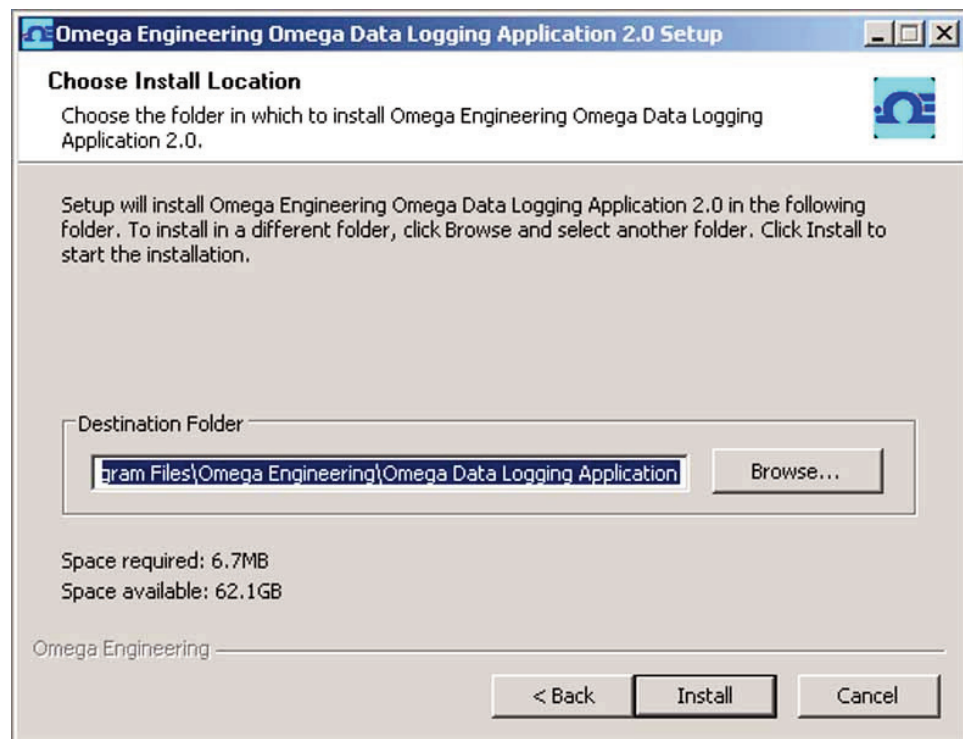


Figure 3-3. Choose Install Location

This window allows you to specify a location for the application to be installed. You can click Browse to choose another location or click Install to keep the default location. After you click Install you should see a progress bar and then the completing installation window as shown below. Click Finish to complete the installation.



Figure 3-4. Installation Complete

After installation, the software will be listed under the default Omega Engineering software program group and saved under the default "C:\Program Files\Omega Engineering\Omega Data Logging Application" directory unless another location was chosen.

### 3.3 USB Driver Installation

To install the USB software drivers that are required for your OM-80 reader to operate correctly follow these procedures.

**NOTE:**

---

You need to have the OM-80 Series Data Logging Software CD that was supplied with your receiver loaded into the CD drive on your PC.

---

1. Connect your OM-80-RD1 tag reader to your computer with the USB cable provided in the box with your device. You should get a notice box that indicates that your computer "Has Found New Hardware"
2. Your computer will then launch the Found New Hardware Wizard. Follow the instructions indicated on the Wizard boxes and the additional instructions noted in this manual with each box.

**NOTE:**

After completing the Found New Hardware Wizard your system will ask that you repeat this process. This is normal. You should repeat the steps outlined here twice. After the second driver is installed you should then get the "New Hardware Ready For Use" notice.



Figure 3-5. Welcome To The Found New Hardware Wizard Screen

From this box you should check the "No, not at this time" button. Then click the "Next >" button to continue with the driver installation process.

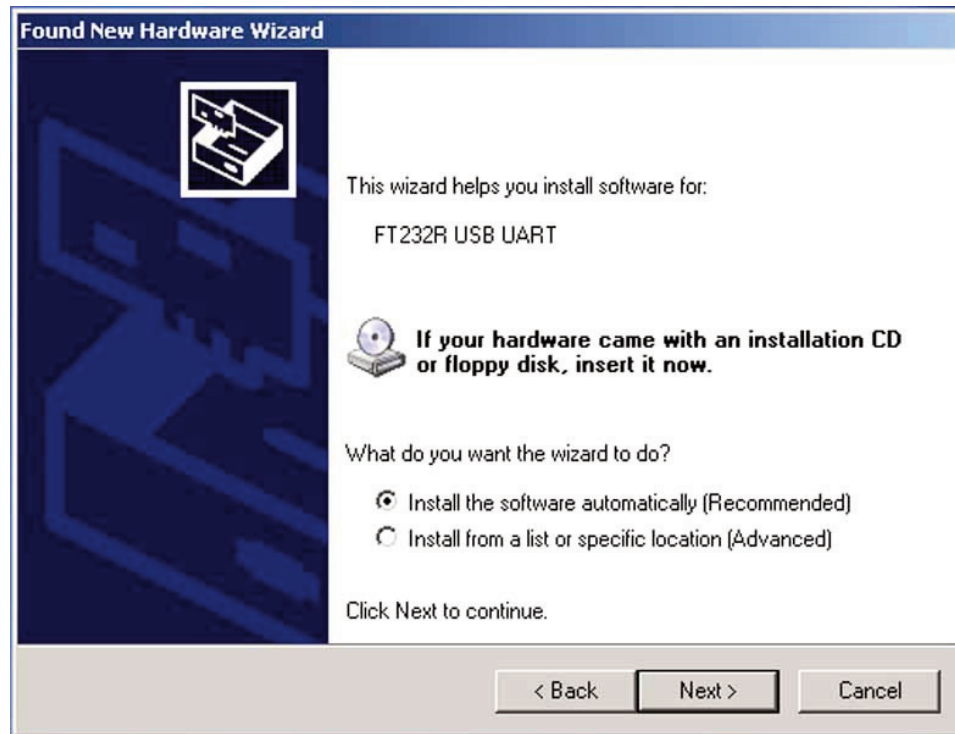


Figure 3-6. Install Software Automatically Screen

Next, check the “Install the software automatically” button. Then click the “Next>” button to continue.



Figure 3-7. Completing The Found New Hardware Wizard Screen

This screen will be displayed to indicate that the software drivers have been installed. You should click the “Finish” button to complete the process.

### 3.4 OM-80 Series Data Logging Software

To launch the OM-80 Series Data Logging program on your PC begin by accessing the Programs list under your Start Menu. Next, scroll through the list of program folders to find the Omega Engineering folder. Inside the Omega Engineering folder click on the OMEGASOFT program link. This will start the software running.



Figure 3-8. Launch Data Logging Software

The Data Logging Software has five main areas that comprise the user interface, the Menu Bar, Status Information Area, Operation Buttons, Control Tabs, and Data Display Area.

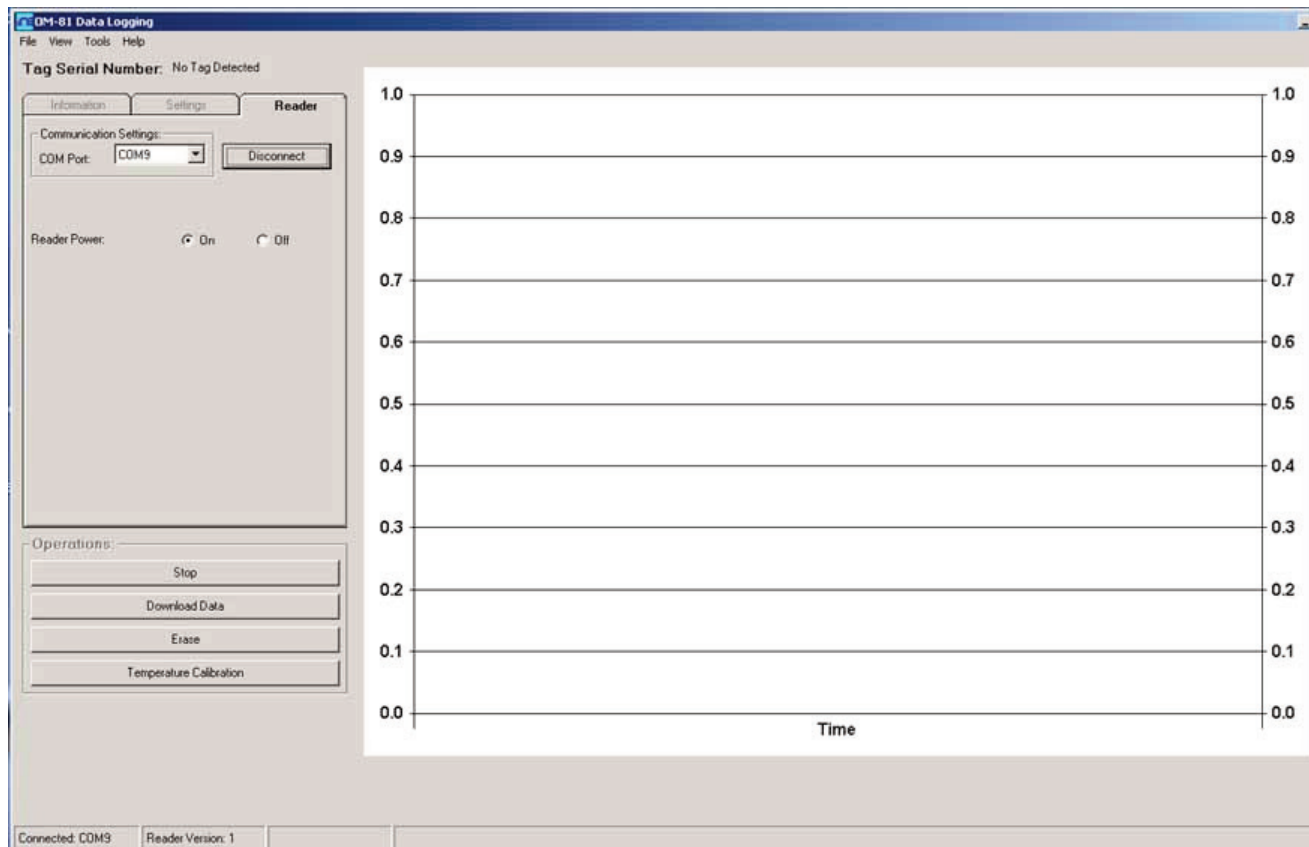


Figure 3-9. OM-84 Data Logging Program

### 3.4.1 Menu Bar

The menu bar allows you easy access to commands and functions.

File View Tools Help

To activate a menu, click the menu title or press the ALT key in combination with the underlined letter of the menu title (e.g., ALT+F to open the File menu). When the menu appears, click a menu item, or press the underlined key, to choose a command.

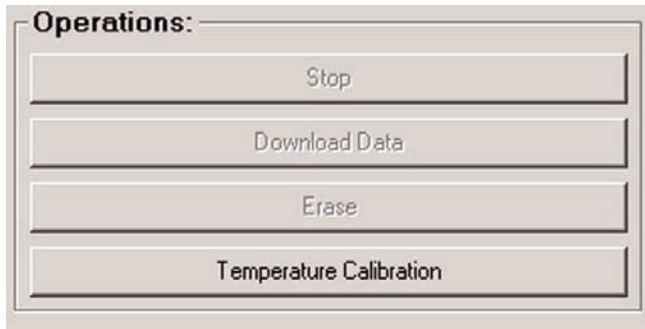
### 3.4.2 Status Information Area

The Status Information Area shows what COM port your reader is connected to, the firmware version of the reader and the progress when downloading data from a tag.

Connected: COM3 Reader Version: 1 Retrieved 128 of 1000 records.

### 3.4.3 Operation Buttons

These buttons allow you to perform various operations depending on the current state of the data logger tag.



### 3.4.4 Control Tabs

When the OM-80 Series Data Logging program starts up, the Reader tab is displayed. This tab displays information on the connection to the tag reader. This view allows you to select a COM port to connect to and to power the reader on or off. The Information and Settings tabs will be greyed out until a tag is detected by the reader.

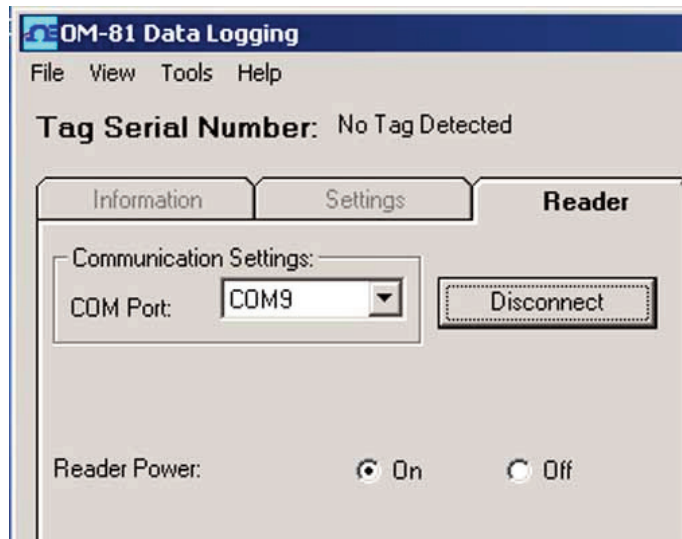


Figure 3-10. Reader Tab

The Information tab shows all the status information regarding the tag currently on the reader. When the reader detects a tag the software will automatically switch to the information tab.

The Settings tab is where you enter all the various data logging parameters that you want to upload to the tag.

### 3.4.5 Data Display Area

The Data Display Area has two options for display of the logged data. It can show either a graph of the logged data or a table.



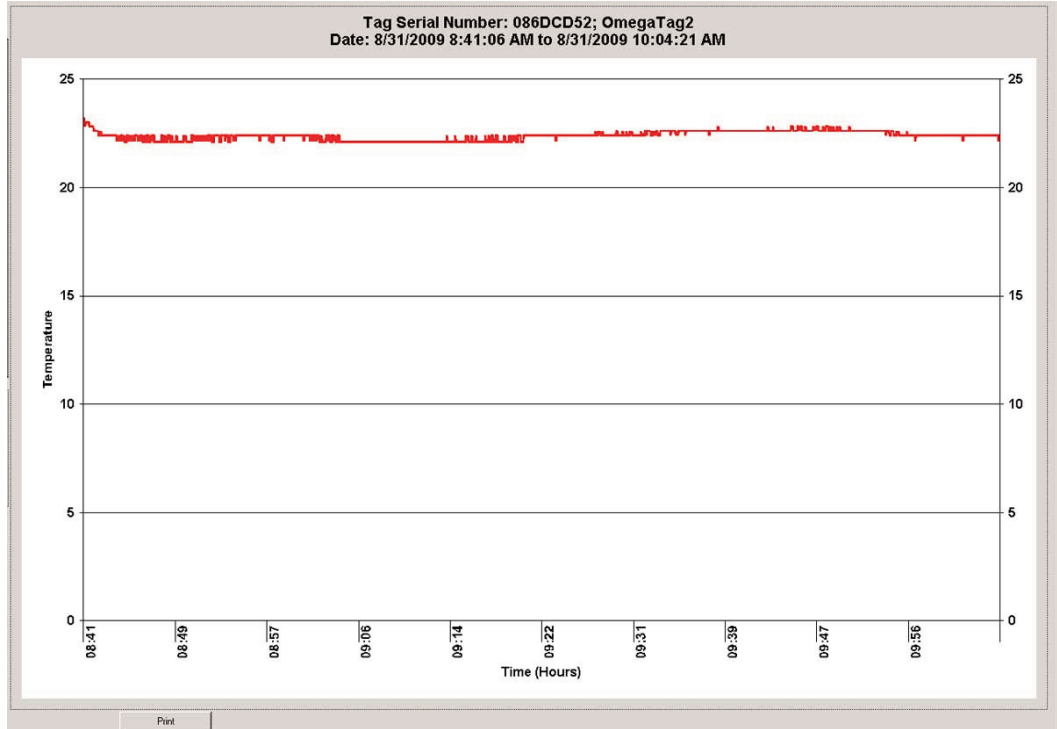


Figure 3-11. Data Graph

Index	Timestamp	Centigrade	Fahrenheit	High Threshold Exceeded	Low Threshold Exceeded
1	8/31/2009 8:41:06 AM	23.2	73.8		
2	8/31/2009 8:41:11 AM	22.8	73.0		
3	8/31/2009 8:41:16 AM	23.0	73.4		
4	8/31/2009 8:41:21 AM	23.0	73.4		
5	8/31/2009 8:41:26 AM	23.0	73.4		
6	8/31/2009 8:41:31 AM	23.0	73.4		
7	8/31/2009 8:41:36 AM	22.8	73.0		
8	8/31/2009 8:41:41 AM	22.8	73.0		
9	8/31/2009 8:41:46 AM	22.8	73.0		
10	8/31/2009 8:41:51 AM	22.8	73.0		
11	8/31/2009 8:41:56 AM	22.8	73.0		
12	8/31/2009 8:42:01 AM	22.6	72.6		
13	8/31/2009 8:42:06 AM	22.6	72.6		
14	8/31/2009 8:42:11 AM	22.6	72.6		
15	8/31/2009 8:42:16 AM	22.6	72.6		
16	8/31/2009 8:42:21 AM	22.6	72.6		
17	8/31/2009 8:42:26 AM	22.4	72.2		
18	8/31/2009 8:42:31 AM	22.4	72.2		
19	8/31/2009 8:42:36 AM	22.6	72.6		
20	8/31/2009 8:42:41 AM	22.4	72.2		
21	8/31/2009 8:42:46 AM	22.4	72.2		
22	8/31/2009 8:42:51 AM	22.4	72.2		
23	8/31/2009 8:42:56 AM	22.4	72.2		
24	8/31/2009 8:43:01 AM	22.4	72.2		
25	8/31/2009 8:43:06 AM	22.4	72.2		
26	8/31/2009 8:43:11 AM	22.4	72.2		
27	8/31/2009 8:43:16 AM	22.4	72.2		
28	8/31/2009 8:43:21 AM	22.4	72.2		
29	8/31/2009 8:43:26 AM	22.4	72.2		
30	8/31/2009 8:43:31 AM	22.4	72.2		
31	8/31/2009 8:43:36 AM	22.4	72.2		
32	8/31/2009 8:43:41 AM	22.4	72.2		
33	8/31/2009 8:43:46 AM	22.4	72.2		
34	8/31/2009 8:43:51 AM	22.4	72.2		
35	8/31/2009 8:43:56 AM	22.4	72.2		
36	8/31/2009 8:44:01 AM	22.4	72.2		
37	8/31/2009 8:44:06 AM	22.1	71.9		
38	8/31/2009 8:44:11 AM	22.4	72.2		
39	8/31/2009 8:44:16 AM	22.1	71.9		
40	8/31/2009 8:44:21 AM	22.4	72.2		
41	8/31/2009 8:44:26 AM	22.1	71.9		
42	8/31/2009 8:44:31 AM	22.4	72.2		
43	8/31/2009 8:44:36 AM	22.4	72.2		
44	8/31/2009 8:44:41 AM	22.1	71.9		
45	8/31/2009 8:44:46 AM	22.4	72.2		
46	8/31/2009 8:44:51 AM	22.1	71.9		
47	8/31/2009 8:44:56 AM	22.1	71.9		
48	8/31/2009 8:45:01 AM	22.4	72.2		
49	8/31/2009 8:45:06 AM	22.4	72.2		
50	8/31/2009 8:45:11 AM	22.1	71.9		
51	8/31/2009 8:45:16 AM	22.4	72.2		
52	8/31/2009 8:45:21 AM	22.1	71.9		

Figure 3-12. Data Table

1. Connect the standard USB connector to any available port on your PC.
2. Connect to other end of the cable with the USB Mini-A connector to the OM-80-RD1

## Section 5 – Tag Configuration/Operation

### 5.1 Tag Information

To begin configuring your OM-80 series tags, connect your OM-80-RD1 reader as described in Section 4. After connecting the reader start the Data Logging software as described in Sections 3-3, select the appropriate COM port and click the Connect button to connect to the reader. If you were successful in connecting to the reader the status bar should show the COM port you are connected to and the version of firmware for the reader.

Place a tag on top of the reader inside the rectangular box where you see the words "PLACE TAG HERE". Next push the START button on the tag twice to wake the tag and start communication with the reader. If the tag is successfully detected the software will automatically switch to the Information tab and you will see a display similar to Figure 5-1.

**NOTE:**

While the tag is on a reader that is powered on, it will not enter "sleep mode" and therefore will consume battery life at a relatively high rate. Therefore, it is **HIGHLY RECOMMENDED** that a tag be removed from a reader or the reader be turned off after the tag has been configured.

**NOTE:**

Only one tag at a time may be presented to the reader.

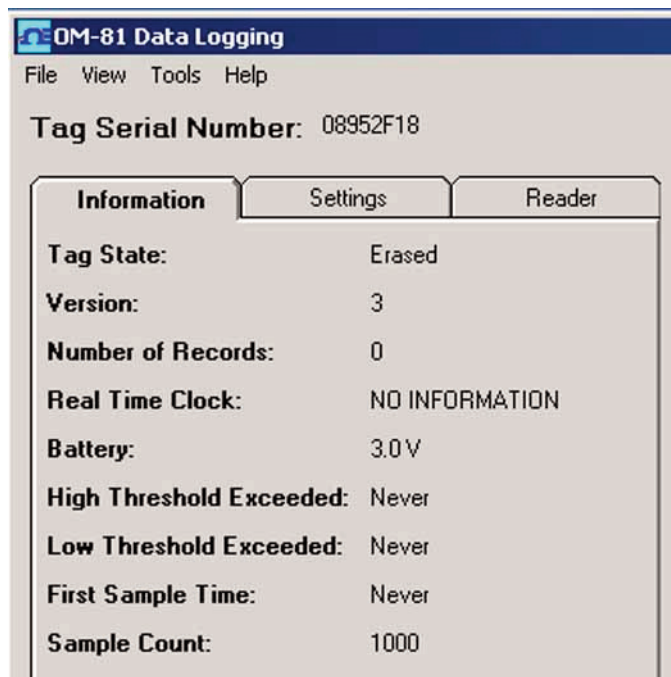


Figure 5-1. Erased Tag Information

**Tag State:**

When powered, the tag is in one of 5 states:

**ERASED:** All data samples on the tag have been deleted.  
(The previous configuration will still be available)

The tag must be in the STOPPED state to erase it.

Status Display: one blink

**CONFIGURED:** A new configuration is loaded on the tag and it waiting for a button press to enter the ACTIVATED state.

The tag must be in the ERASED state to configure it.

Status Display: two blinks

**ACTIVATED:** The tag is waiting for a certain amount of time to pass before commencing data logging.

Status Display: three blinks

**LOGGING:** The tag is logging data.

Status Display: three blinks

**STOPPED:** The tag has data but is no longer logging because it has finished logging or was commanded to stop logging.

Status Display: four blinks

---

**NOTE:**

Even though the ACTIVATED and LOGGING states are distinct, they have the same number of blinks because no more intervention is required by the user.

---

**Version:**

This indicates the version of firmware on the tag.

**Number of Records:**

The number of temperature readings currently logged on the tag.

**Real Time Clock:**

This is the current value of the real time clock on the tag. If the tag is in the STOPPED or ERASED states this will indicate "NO INFORMATION".

**Battery:**

This gives an indication of the battery voltage of the tag.

**High Threshold Exceeded:**

This indicates the date and time when the high threshold temperature was first exceeded.

**Low Threshold Exceeded:**

This indicates the date and time when the low threshold temperature was first exceeded.

**First Sample Time:**

Indicates the date and time when the first sample was logged.

**Sample Count:**

Indicated the total number of samples to be logged during the current session.

## 5.2 Configuring Tag Settings

Once the tag has been detected you can start configuring it. Select the Settings tab to begin configuration.

**NOTE:**

Be sure to put the tag in the Erased state before you begin entering your configuration settings or you will have to erase the tag and re-enter all your settings. Be sure to download any logged data from previous sessions before you erase the tag.

Information	Settings	Reader
<b>Tag ID:</b> OM-81 mini NOMAD		
<b>Sample Interval:</b> 60 seconds		
<b>Status Display Interval:</b> 0 seconds		
<b>Start Settings:</b>		
<input type="radio"/> Start Logging At: 07/29/2009 15:01:04		
<input checked="" type="radio"/> Start Logging: 5 seconds after button press		
<b>Stop Settings:</b>		
<input type="radio"/> Stop Logging: 60000 seconds after button press		
<input checked="" type="radio"/> Stop Logging After: 1000 samples		
Logging will stop at: 7/30/2009 7:45:46 AM		
<b>Alarms:</b>		
<b>High Threshold:</b> 0 centigrade		
<b>Low Threshold:</b> 0 centigrade		
Update		Cancel

Figure 5-2. Erased Tag Settings

## Configuration Settings

### TAG ID:

The tag allows the user to store 32-bytes of unrestricted data. Suggested uses are for a human readable "TAG ID" and/or a record of where the tag was configured.

### Sample Interval:

Enter the number of seconds between temperature measurements. This number can range from 1 to 32,767 (1 sec to 9 hrs, 6 mins, 7 secs)

---

**NOTE:**

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The sample interval cannot be zero.

---

### Sample Display Interval:

Enter the number of seconds between automatic status displays on the LEDs.

A value of zero disables the automatic display of the tag's status. This is highly recommended as the LEDs are the main factor in determining battery life. The status button can be pressed at any time to force a status display.

Values between 1 and 255 (1 sec to 4 mins, 15 secs) are also allowed.

### Start Settings:

If you wish to start logging at a specified date and time (Alarm Clock mode) select the Start Logging At radio button and then either manually entering the date and time or click the drop down calendar to select the date.

If you would rather start logging a specified number of seconds after the START button is pressed on the tag (Delay mode), select the Start Logging radio button and enter a number of seconds for the delay.

### Stop Settings:

You can choose to have the tag stop logging a specified number of seconds after logging starts or after a specified number of samples have been logged. A maximum of 10,000 samples can be logged in one session.

### Alarms:

Enter a high threshold temperature value and a low temperature threshold value between  $-273$  and  $125^{\circ}\text{C}$ . If these temperature limits are exceeded while the tag is logging, this will cause the alarm LED to be turned on during status displays. The alarm feature can be disabled by leaving the fields blank.

---

**NOTE:**

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Only "logged" temperature measurements are compared against this limit. That is, if a particularly long sample interval is selected (say 9 hours), it is possible that the temperature level may exceed this limit and return below it without being detected.

---

**NOTE:**

Temperatures before the tag starts collecting data or after it stops collecting data are ignored.

After you have entered all of your configuration settings, press the Update button to upload the settings to the tag. If the settings are successfully uploaded the software will automatically switch to the Information tab again and display the current status of the tag.

### Tag Profiles

Tag configuration settings can be saved as a Tag Profile File (.omp) by clicking Save Profile under the File menu. This frees the user from having to manually enter the same settings repeatedly if programming many tags with different configurations. To change settings simply click Load Profile under the file menu and select the appropriate profile file.

## 5.3 Logging Data

If your tag is configured for Alarm Clock mode no further user action is required. Simply place that tag in the location you wish to log temperature. If you are using the Delay mode for logging you will need to press and hold the START button for approximately 2 seconds to activate the tag.

**NOTE:**

It is a good idea to confirm that the tag is in the Active state, to ensure that logging will commence. Either wait for an LED status display to occur or press the start button for 1 second or less to force a status display.

## 5.4 Retrieving Data

When your tag has completed logging the current session or you no longer wish to collect data, place the tag on the reader and press the START button twice to wake the tag and start communication to the reader. Once the tag has been detected by the reader, press the Download Data button under Operations to begin retrieval of the logged data. The Status Information Area will display the progress while downloading data. When the download is complete you will be able to view the graph or scroll through the table. To save the data in a .csv file click on the File menu and select save.

**NOTE:**

Data files can only be saved after downloading with the tag still on the reader!

## Section 6 – Calibration

All tags come factory calibrated. Should the need arise, users can calibrate at a chosen temperature to obtain better accuracy. To calibrate your tag follow the steps below.

### STEP 1. Configure Tag

Place the tag on the reader and press the START button twice to wake the tag in start communication to the reader. When the reader has detected the tag, put the tag in the erased state. Next, under Operations click the Temperature Calibration button to bring up the Temperature Calibration window as shown in Figure 5-1.

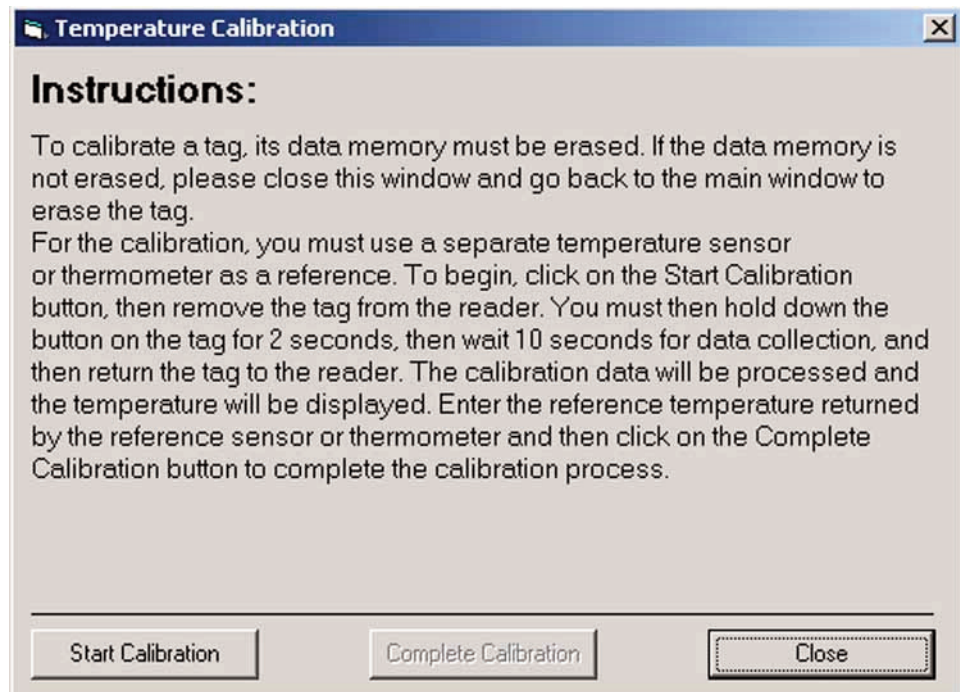


Figure 6-1. Temperature Calibration

Now click the Start Calibration button to begin calibrating the tag. The window shown in Figure 5-2 will appear with further instructions for calibration.

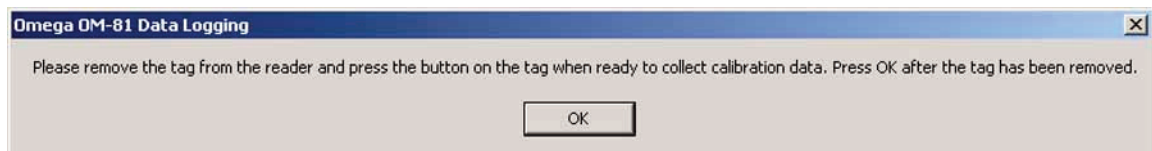


Figure 6-2. Remove Tag

Click OK to continue with the calibration procedure.

### STEP 2. Start Logging

Once you have allowed the tag temperature to come to equilibrium and have a suitable reference temperature sensor near the tag, press the START button for 2 seconds to begin collecting data. When the tag status display indicates that data logging is complete return the tag to the reader.



### STEP 3. Complete Calibration

With the tag on the reader press the start button twice to wake the tag and begin communication with the reader. The window shown in Figure 5-3 should appear if the data was successfully logged.

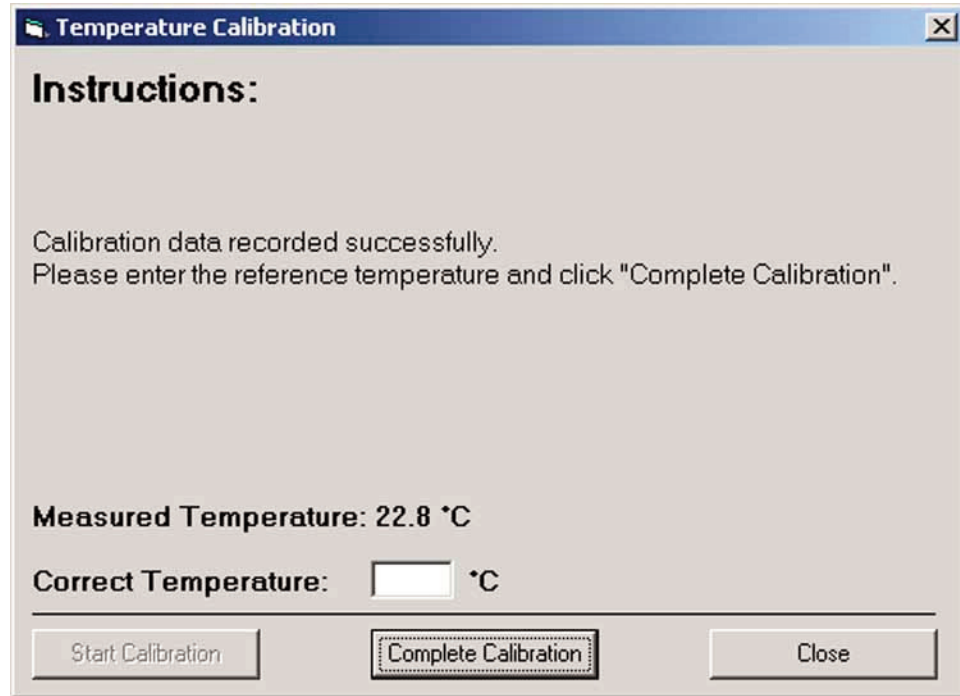


Figure 6-3. Calibration Complete

Enter the correct temperature as measure with your reference thermometer. Click the Complete Calibration button. A small window should appear to let you know the calibration was completed successfully. Click OK to dismiss this window.

## Section 7 – Troubleshooting

### Problem

### Solution

#### Tag Troubleshooting

1. Tag is not detected by reader

- a. Make sure reader is connected and detected in software status bar
- b. Make sure Start button is not stuck
- c. If possible replace battery
- d. Contact Customer Service

#### Reader Troubleshooting

2. Software will not connect to reader

- a. Check USB cable connection
- b. Verify correct port is selected
- c. Contact Customer Service

## **Section 8 – Service**

If any of your data logging system components require service or calibration, please call our Customer Service Department at 1-800-622-2378 or 203-359-1660. They will assist you in arranging the return and service of your device. We can also be reached on the Internet at [www.omega.com](http://www.omega.com), e-mail: [cservice@omega.com](mailto:cservice@omega.com)

## Section 9 – Specifications

### Preliminary Specifications

(Please visit [omega.com/rfid](http://omega.com/rfid) for the latest features and specifications)

#### MODELS

**OM-84-TMP:** Water resistant temperature logger

**OM-85-TMP:** General purpose temperature logger

#### TEMPERATURE MEASUREMENT RANGE

**OM-84-TMP:** -40 to 60°C (-40 to 140°F)

**OM-85-TMP:** -40 to 60°C (-40 to 140°F)

#### ACCURACY

**Temperature:** ±0.5°C from 0 to 50°C  
(±1°C below 0°C or above 50°C)

**Resolution:** 0.1°C or °F

**Storage Temperature:** -40 to 85°C  
(-40 to 185°F)

#### Wireless Operation

**Read/Write Wireless Range:** Up to 25 mm

#### POWER

**OM-84-TMP:** Lithium/manganese dioxide 3 volt coin cell  
(factory replaceable only)

**OM-85-TMP:** Lithium/manganese dioxide 3 volt AAA cell  
(user replaceable)

**Shelf Life:** Up to 3 years (nonactivated) with proper storage

**Usage Life:** Up to 2 years (after activation)

**Memory:** Up to 10,000 readings  
(example: 208 days at 1 reading/30 min)

**Programmable Interval:** 1 to 32,767 seconds  
(9 hours, 6 minutes and 7 seconds)  
selectable in software

**Data Logging Start Time:** Programmable date & time or delayed start from  
button activation, selectable by user

**Operation Status Indicator:** LED blinks green when the unit is activated

**Alarm Status Indicator:** LED blinks red when the unit exceeds high or low  
alarm set point

**Activation:** Push-button on surface of device

**Temperature Alarm:** Programmable temperature alarm with high and  
low limits, selectable in software

#### Dimensions

**OM-84:** 61 L x 43 W x 6.4 mm H (2.4 x 1.7 x 0.25")

**OM-85:** 61 L x 41 W x 19 mm H (2.3 x 1.6 x 0.75")

**Section 10 – Approvals, Regulatory Compliance & Patent Notice****10.1 FCC (Domestic Use: USA & Canada)**

(USA) FCC ID: WR3-OM80RD1 (CANADA) IC #8205A-OM80RD1

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1.) This device may not cause harmful interference.
- 2.) This device must accept any interference received, including interference that may cause undesired operation.

To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by Omega Engineering, Inc. could void user's authority to operate this equipment.

**NOTE:**

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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**10.2 International Usage & CE Marking (Pending)**

The OM-80 Series system components are CE marked and certified for use in several European countries. Please contact OMEGA for information on International Regulatory Compliance for each country.

It is your (the user's) responsibility to insure that these products are operated within the guidelines here in this manual and in conformance with all local or national regulations and laws.

**10.3 Declaration of Conformity (DOC)**

Contact OMEGA for status on CE marking and DOC availability.

**10.4 ESD Susceptibility**

As with many electronic products, these tags are susceptible to ESD (Electrostatic discharge). The discharges may cause the tag to reset this terminating data logging. Normal ESD precautionary measures are highly recommended.



**NOTES:**



## 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 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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