5 YEAR WARRANTY

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User's Guide

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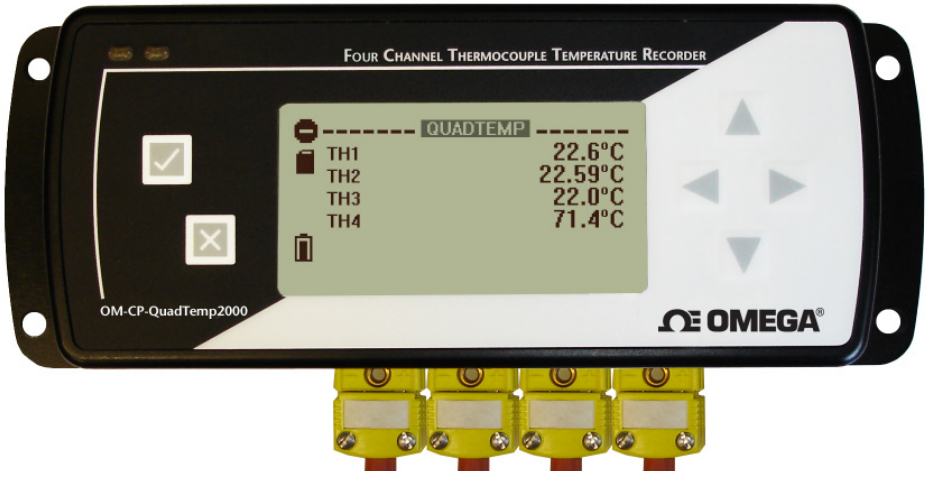

OM-CP-QUADTEMP2000
4-Channel Thermocouple Datalogger with LCD Display

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Toll Free in United Kingdom: 0800-488-488
e-mail: sales@omega.co.uk

Table of Contents

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:

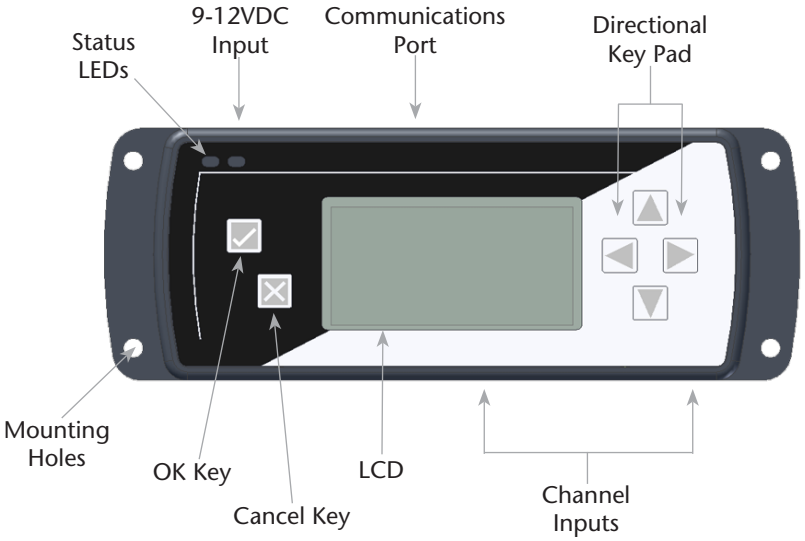
OMEGA Engineering, INC.
One Omega Drive
Stamford, Connecticut 06907-0047
P.O. Box 4047

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

info@omega.com

Section 2: Introducing the OM-CP-QUADTEMP2000

1.2 Device Overview



Keypad Functions

	OK Key
	Cancel Key
	Up/Down Directional Keys
	Left/Right Directional Keys

2.2 Display Overview

Status Indicators

	Battery Power (Full, Half-full, Empty)
	Memory Remaining (Empty, Half-full, Full)
	Device is running
	Device is stopped
	Delay Start
	Push-button (Manual) Start
	Device reset has occurred
	External power present

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:

Type	Range	Resolution	Accuracy
J	-200 to +760°C	0.1°C	± 0.5°C
K	-200 to +1370°C	0.1°C	± 0.5°C
T	-200 to +400°C	0.1°C	± 0.5°C
E	-200 to +980°C	0.1°C	± 0.5°C
R	-50 to +1760°C	0.1°C	± 2.0°C
S	-50 to +1760°C	0.1°C	± 2.0°C
B	+50 to +1820°C	0.1°C	± 2.0°C
N	-200 to +1300°C	0.1°C	± 0.5°C

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; 2,000,000 total readings; software configurable memory wrap

Reading Rate

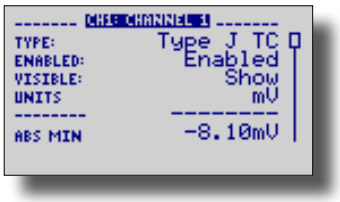
4 readings per second (4Hz) up to 1 reading every 24 hours

Calibration Digital calibration through software. Calibration date automatically recorded within device. NIST traceable certificate available.
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 USB (interface cable required); 115,200 baud
Software XP SP3/Vista/Windows 7 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

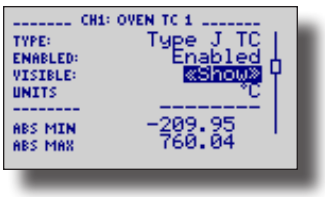
3.1 Channel Options

Each of the OM-CP-QUADTEMP2000'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**:

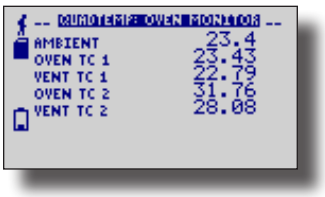
1. Press ☑ to view first **channel screen**
2. Use ◀ ▶ to view additional channels
3. On desired channel screen use ▲ ▼ to highlight **Visible**
4. Use ◀ ▶ to choose **Show** or **Hide**
5. Press ☒ to return to the **Home Screen**

—OR—

1. Use ▲ ▼ to highlight desired channel
2. Press ☑ to view **channel screen**
3. Use ▲ ▼ to highlight **Visible**
4. Use ◀ ▶ to choose **Show** or **Hide**
5. Press ☒ to return to the **Home Screen**

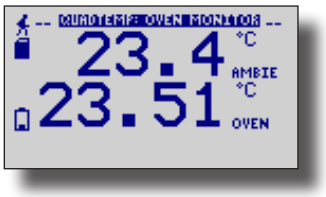
3.3 Change Channel Display Size

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

Medium Font



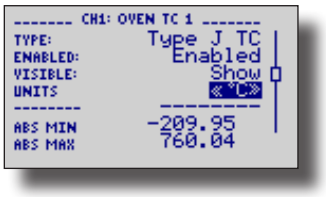
Large Font

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 ◀ ▶ to view desired statistic screen
2. In statistics screen use ▲ ▼ to view statistics for each channel
3. Use ◀ ▶ to scroll back to the **Home Screen**

3.7 Clear Channel Statistics

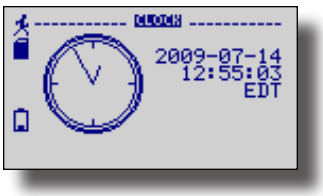
Statistics may be cleared and reset at any time.

To clear channel statistics from the **Home Screen**:

1. Press ☒ to enter the **Main Menu**
2. Use ▲ ▼ to highlight **Clear Statistics**
3. Press ☑ to select **Clear Statistics**
4. Press ☑ to confirm statistics clear, ☒ 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 ☒ to enter the **Main Menu**
2. Use ▲ ▼ to highlight **Status**
3. Press ☑ 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 ◀ ▶ 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
- Disabled - LEDs off

Contrast – Set screen contrast value
- Use ◀ ▶ to set desired contrast value

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
Display – Options for display visibility
- Use ◀ ▶ 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
Disabled - LEDs off

Contrast – Set screen contrast value
Use ◀ ▶ to set desired contrast value

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

> 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**

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

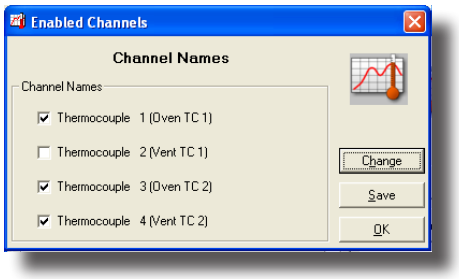
This section details several features of the data logger software that are particularly useful with the OM-CP-QUADTEMP2000 device. For further information regarding the software, please visit www.omega.com.

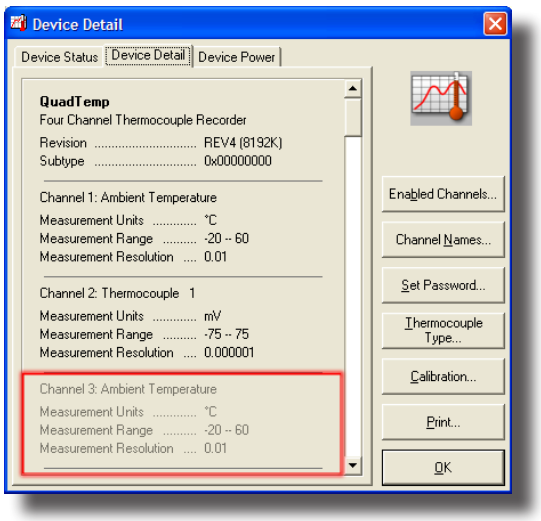
5.1 Enable and Disable Channels

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 it's 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





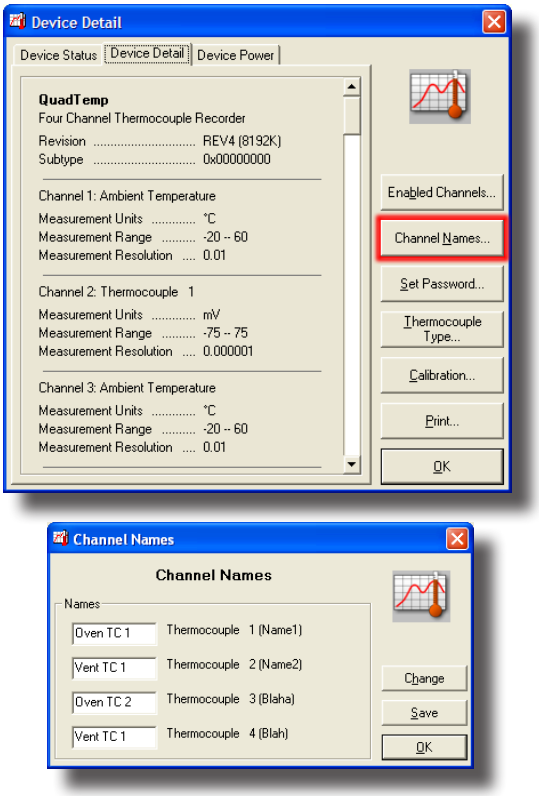
Notice that disabled thermocouple and ambient channels appear greyed-out on the Device Detail screen.

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

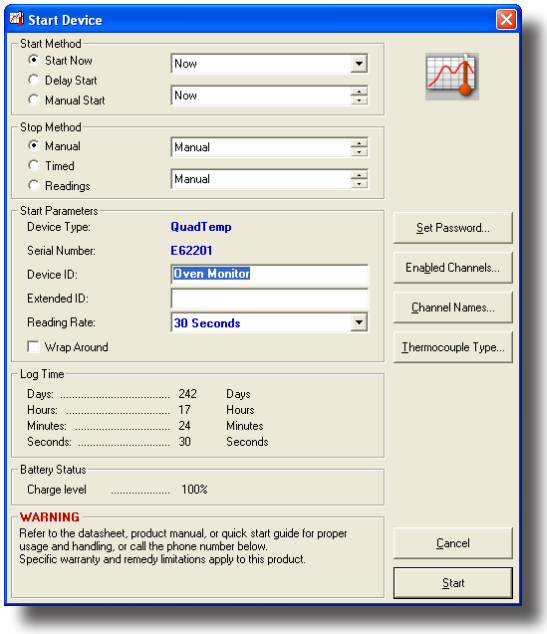


5.3 Change Device ID

Each OM-CP-QUADTEMP2000 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.

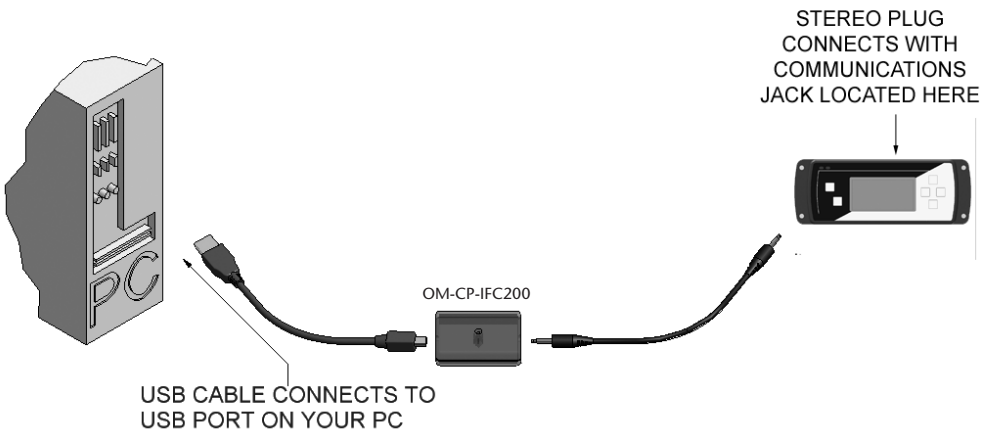
***See the individual specification sheets at www.omega.com.**

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:



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)*

WARRANTY/DISCLAIMER

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.

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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.

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