

# User's Guide

CE



Model PX750 Smart Kit

**Ω OMEGA®**

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PX750  
Smart Kit



## RETROFITTING OVERVIEW

The procedure for retrofitting a transmitter is divided into three parts:

1. Removing the analog electronics assembly.
2. Installing the smart electronics kit.
3. Characterizing the retrofitted transmitter.

Two tools are required to remove the analog electronics and to install the smart electronics:

- Flat-bladed screwdriver
- ¼-in. nut driver or wrench

The following equipment is needed to characterize the retrofitted transmitter:

- A Omega Model HC275 Communicator with SMART FAMILY® Interface
- An accurate pressure source, preferably 0.025% accuracy or better
- A 250 ohm resistor

The Smart Retrofit Kit, P/N PX750-SMART-KIT, contains the following items:

Quantity	Description
1	Smart electronic assembly
1	Electronics cover
1	Cover O-ring
2	Terminal eyelets
2	Board spacers
2	Standoffs

## REMOVING THE ANALOG ELECTRONICS ASSEMBLY

### CAUTION

Use proper earth grounding techniques when handling the smart electronics assembly. The smart electronics assembly is potentially sensitive to electric static discharge.

The vast majority of installed Model PX750 Transmitters have either 4–20 mA linear or 4–20 mA square root output .

The following steps describe how to remove the analog electronics assembly from transmitters for smart retrofitting.

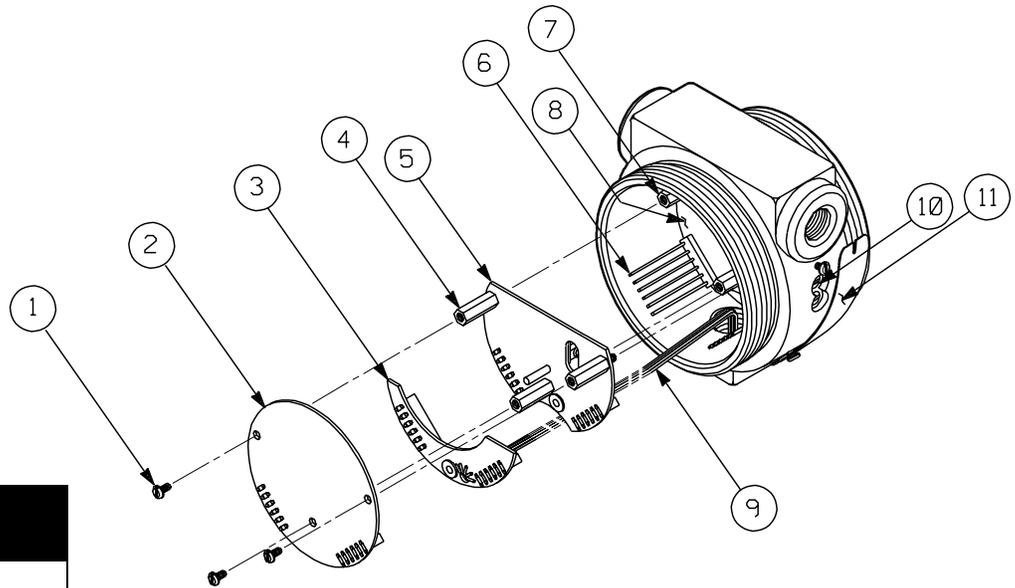
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### NOTE

Numbers in parentheses indicate parts shown in Figure C-1.

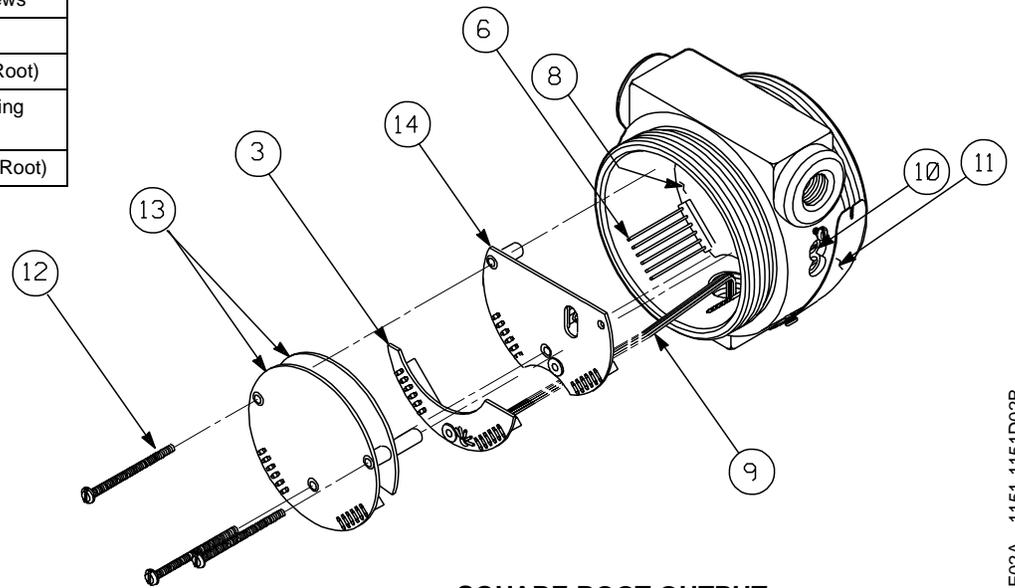
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FIGURE C-1. Model PX750 Analog Electronics.



**LINEAR OUTPUT**

Ref. No.	Part Description
1	Retainer Screws (Linear)
2	Amplifier Board (Linear)
3	Header Board Assembly
4	Standoff Screws (Linear)
5	Calibration Board (Linear)
6	Bayonet Connector Pins
7	Standoff Screws (Linear)
8	Sensor Module Electronics
9	Wiring
10	Zero and Span Adjust Screws
11	Housing Cover
12	Retainer Screws (Square Root)
13	Two-board Amplifier/Squaring Assembly (Square Root)
14	Calibration Board (Square Root)



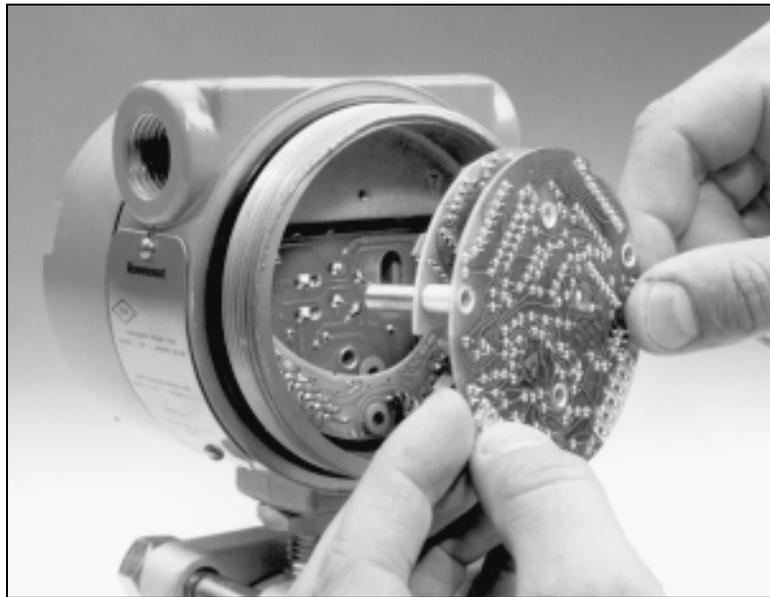
**SQUARE ROOT OUTPUT**

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- 1-4 With power disconnected, remove cover and three retainer screws (1/12).  
Pull the amplifier board (2/13) directly off the bayonet connectors (6).



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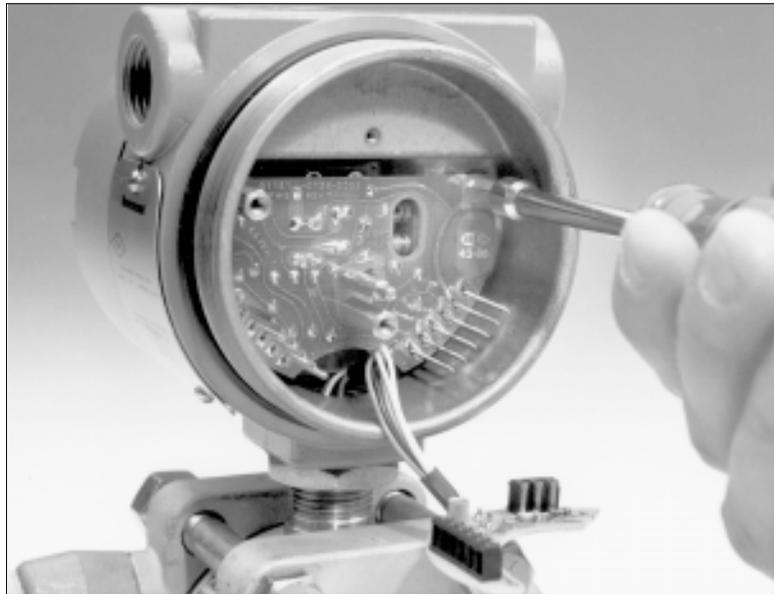
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5. Pull the header board assembly (3) off the bayonet connectors. The header board must be reinserted. Do not cut the wires (9) or remove the header board.



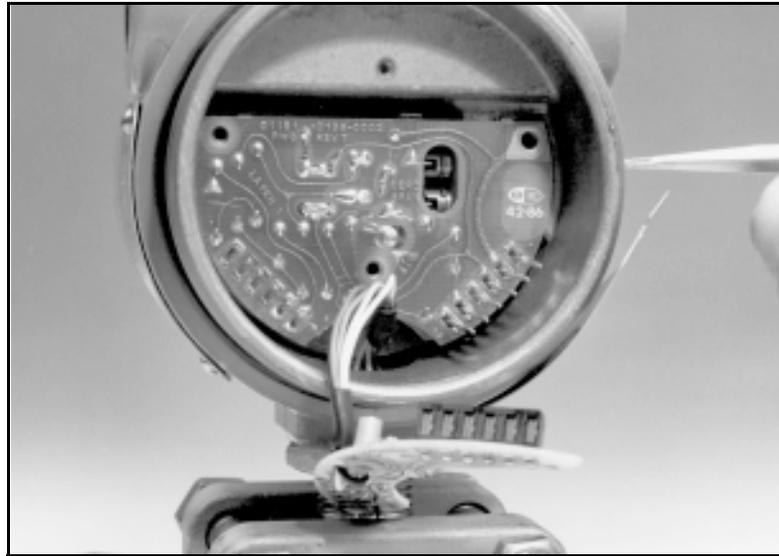
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6. If the transmitter has linear output electronics, remove the three standoffs (4). Use a ¼-in. nut driver or wrench.

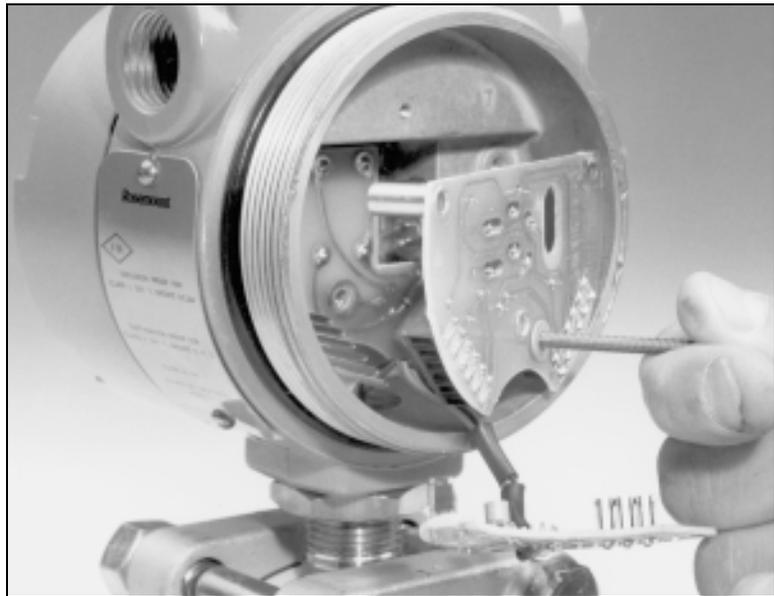
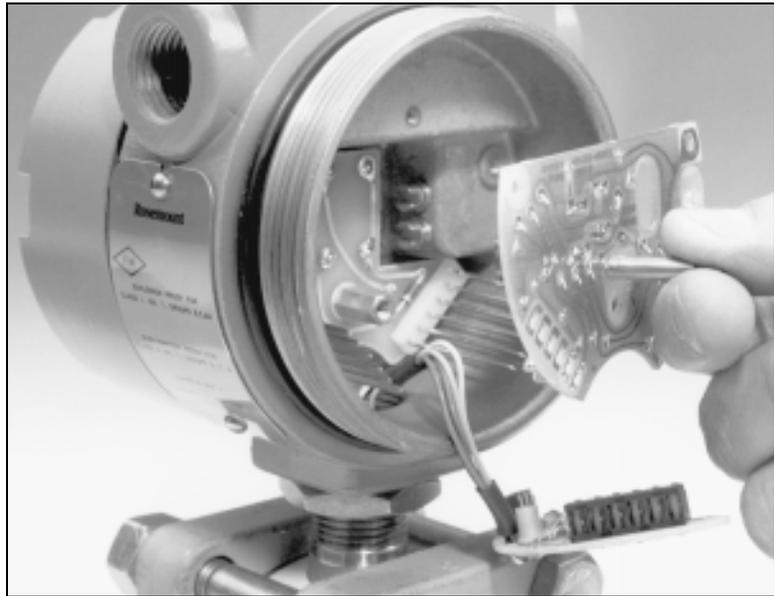


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7. Align the zero and span adjust screws (10) so that the potentiometer blades are perpendicular to the board.



8. For linear output models, grip the calibration board (5) by the interface pin. For square root output modes insert a retainer screw into the threaded rivet for use as a handle. Pull out the calibration board. (Removing the calibration board disables the conventional zero and span screws.)



Insert the standoffs (7), if necessary. The transmitter is now ready to receive the plug-in smart electronics assembly.



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## INSTALLING THE SMART RETROFIT KIT

Installing the smart retrofit electronics kit in the transmitter requires installing plastic spacers to accommodate the retrofit kit and securing the retrofit electronics. After the retrofit kit has been installed, it is necessary to attach eyelets to the terminal side of the transmitter. The eyelets enable hook-up with a HART-based communicator (see Figure C-2).

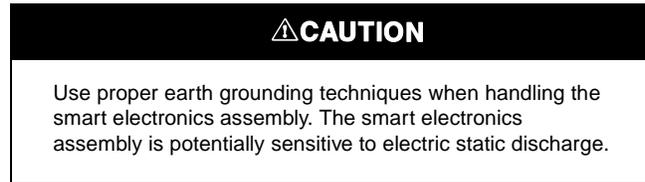
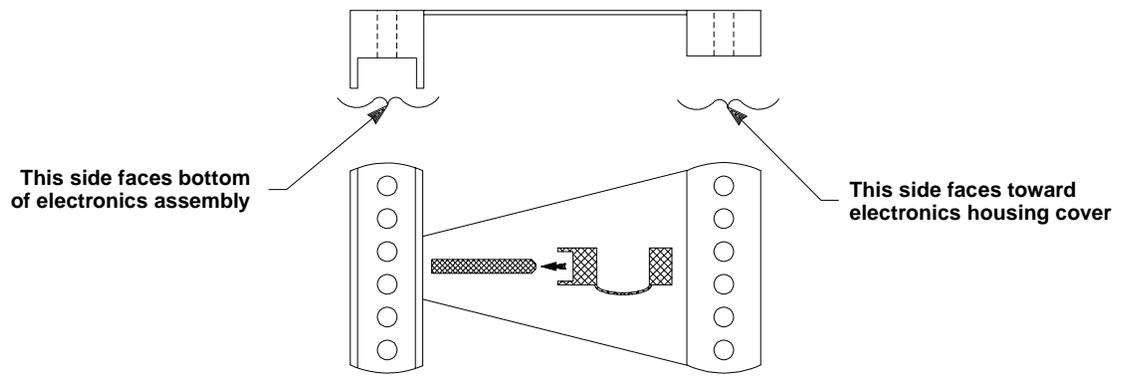
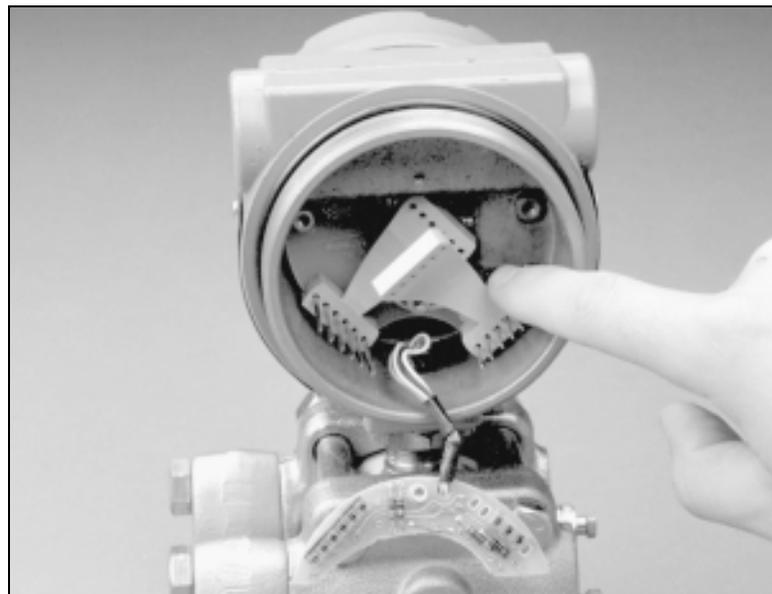


FIGURE C-2. Spacer Assembly.

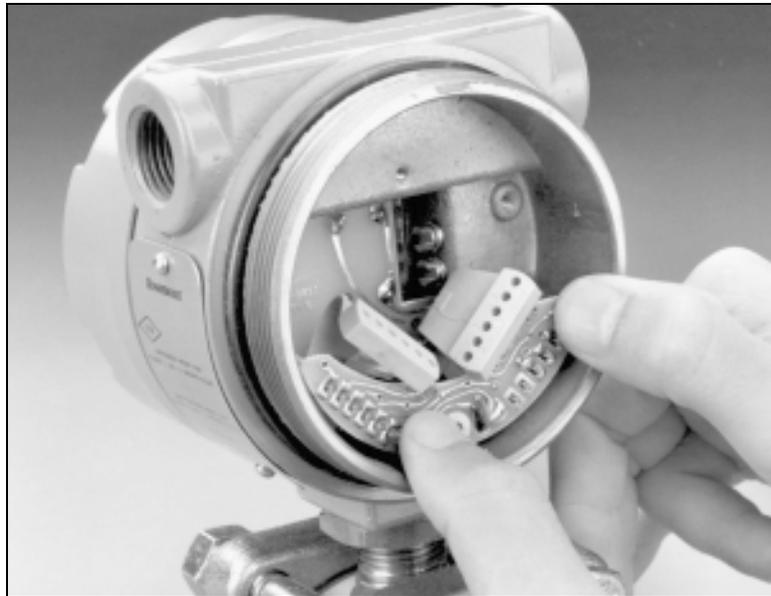


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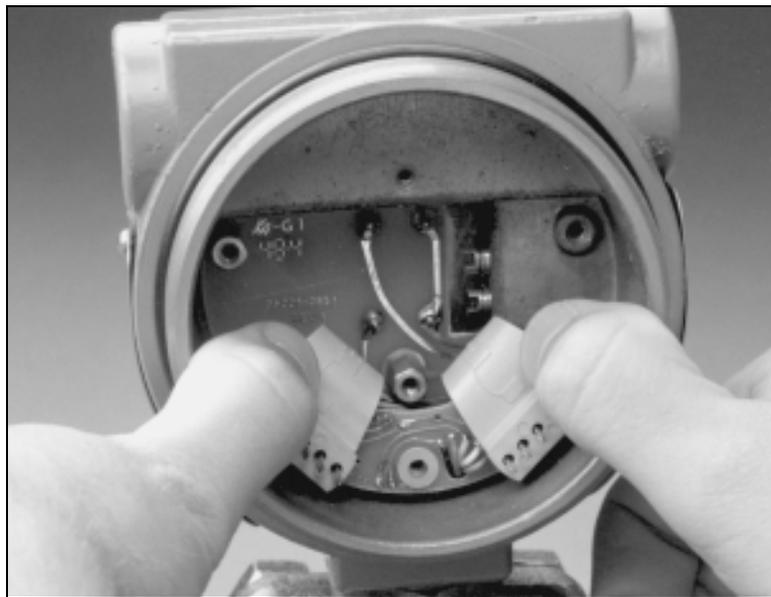
1. Slide the bottom half of one spacer over one of the rows of bayonet connectors. Then repeat the procedure for the other row.



2. Align the header board with the bayonet connector pins, and slide the header board halfway down the pins.



3. Align the tops of both spacers with the bayonet connector pins, and slide them down the pins, pushing firmly on both the spacers and the header board to seat the board.



4. Align the smart electronics assembly with the bayonet connector pins, making sure all pins line up with the proper receptacles. Next push the assembly slowly inward until it is fully seated.
5. Tighten the three captive screws on the smart electronics assembly to secure it in place.
6. Attach the electronics cover provided in the smart retrofit kit, and tighten securely.
7. Remove the cover from the terminal side of the transmitter.

Two eyelets that fit under the + and – signal terminal screws are provided to facilitate connections to HART-based communicator. The signal terminal is the upper block as indicated on the transmitter housing.

8. Remove the signal terminal + and – screws. Attach an eyelet to each screw, and reinsert the screws.
9. Reattach the cover on the terminal side, and tighten securely.

## CHARACTERIZATION

The transmitter is now ready to be characterized. Characterization is a one-time calibration of the sensor in the Model PX750 Transmitter. During characterization, known pressures are applied to the sensor, and corresponding digital values are stored in the EEPROM located in the smart transmitter electronics. The microprocessor uses these values to make linearization corrections. The digital-to-analog converter then converts the corrected digital signal into a 4-20 mA dc output. The Model PX750 Transmitter will stay in high alarm (approximately 22 mA output) until the characterization sequence is completed.

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### NOTE

The transmitter must be re-characterized if either the sensor module or the smart transmitter electronics are repaired or replaced.

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### Before Characterizing the Transmitter

1. Be prepared to answer the following questions:  
Module type?  
Module range?  
Pressure units on your pressure source?  
Serial number?
2. Connect the pressure source.
3. Remove the terminal side cover of the Model PX750 Smart Pressure Transmitter.
4. Connect power supply leads to the terminal block. Apply power to the transmitter.

### NOTE

Failure to use accurate equipment may result in a transmitter that cannot meet its accuracy specification.

### Characterizing with a Model 275 Communicator

1. Connect the Model HC275 Hart communicator electrical connections to the SIGNAL terminal block. The Model HC275 connections are not polarity sensitive.
2. Turn the Model HC275 on by pushing the I/O button.
3. Follow the HC275 menus to characterize:
  - Device setup
  - Detailed setup
  - Sensor
  - Pressure sensor
  - Sensor service
  - Characterize
4. Follow the instructions on the screen.
5. Verify the new transmitter configuration:
  - Tag
  - Range points
  - Linear/square root
  - Damping
6. Verify that the Fail Safe Mode Switch and the Transmitter Security Switch on the smart electronics circuit board are correct.
7. Attach the electronics cover and tighten.
8. Put the transmitter back in service.

## 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 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 which wear are not warranted, including but 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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This affords our customers the latest in technology and engineering.

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