1 YEAR WARRANTY

MADE IN USA

User's Guide

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ISO 9002 CERTIFIED CORPORATE QUALITY MANCHESTER, UK

CN-TOT-A Series

Portable Thermocouple Temperature Controller

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INTRODUCTION

OMEGALUX® CN-TOT Portable Thermocouple Temperature Controllers are designed for general purpose use in indoor environments to control the temperature of small tanks, drums, pipes, or other applications requiring automatic control.

SAFETY ALERT SYMBOL

The symbol above is used to call your attention to instructions concerning your personal safety. It points out important safety precautions. It means "**ATTENTION! Become Alert! Your Personal Safety is involved!**" Read the message that follows and be alert to the possibility of personal injury or death.

⚠ DANGER

Immediate hazards which WILL result in severe personal injury or death

⚠ WARNING

Hazards or unsafe practices which COULD result in severe personal injury or death

⚠ CAUTION

Hazards or unsafe practices which COULD result in minor personal injury or property damage.

SAVE THESE INSTRUCTIONS!

Additional copies of this manual are available upon request.

IMPORTANT SAFETY INSTRUCTIONS

⚠ DANGER

A person who has not read and understood all installation instructions is not qualified to install this product.

⚠ DANGER

- Do not immerse controller in liquid.
- Keep volatile or combustible material away from controller when in use.
- Use controller only in approved locations.
- Keep sharp metal objects away from controller.

Failure to observe these warnings may result in electric shock, risk of fire, and personal injury.

⚠ WARNING

End User Must Comply to the Following:

- Must be mounted vertically for outdoor use
- Only qualified personnel are allowed to connect electrical wiring.
- All electrical wiring must follow local electrical codes and highly recommend following NEC Article 427.
- Final installation / wiring is to be inspected by the authority who has jurisdication in the area that the heater and temperature controller is installed.
- The end-user is responsible for providing a suitable disconnecting device.
- The end-user is responsible for providing suitable electrical protection device. It is highly recommended that a ground fault circuit breaker is used.

Failure to observe these warnings may result in personal injury or damage to the controller.

⚠ CAUTION

- Inspect all components before use.
- Do not use control and heater if any component is damaged.
- Do not repair damaged or faulty controller.
- Do not crush or apply severe physical stress on any component of controller, including cord assembly.
- Power plug must be plugged into a sheltered outlet.
- Unplug controller when not in use.
- Unplug controller before fuse is changed.
- Do not change the fuse while raining or if water can be splashed into the fuseholder while the cap is off.

Failure to observe these warnings may result in personal injury or damage to the controller.

SPECIFICATIONS

- 120 or 240VAC
- 15 amps
- Digital on/off controller
- Units in °F
- Audible alarm
- Type J thermocouple mini and standard connector input *
- Average accuracy of ±1% FS
- Resolution: 1°
- Hysteresis: 5°
- Mounting feet and mounting bracket kit included
- Operating exposure temperatures:
  14 to 131°F (-10 to 55°C)
- Storage exposure temperatures:
  -4 to 176°F (-20 to 80°C)
- Input power cord 6 feet (1.8m) long with standard plug:
  -120VAC: NEMA 5-15
  -240VAC: NEMA 6-15
- Output receptacle:
  -120VAC: NEMA 5-15R
  -240VAC: NEMA 6-15R

* *Thermocouple sold separately*

Part Number	Volts	Range
CN-TOT-175JF-120V	120	0 to 175°F
CN-TOT-175JF-240	240	0 to 175°F

INSTALLATION / OPERATION INSTRUCTIONS

⚠ WARNING

Read and understand this entire manual before operating this controller.

VOLTAGE:
120VAC; 240VAC

Plug heater into the controller and the controller into its power source. Plug thermocouple into thermocouple jack. Make sure sensing tip is firmly attached to heater. Mount controller using mounting feet. For IBC / tote tank heating applications, attach controller to IBC / tote tank using hanging bracket kit. Push power switch “ON”. Refer to “Programming Instructions” for how to program controller.

PROGRAMMING INSTRUCTIONS

PARAMETER PROGRAMMING

Set Point (SP) is the only parameter the user can access without code protection.

- Press SET. SP text will appear on the display.
- Press SET again. The real value is shown on the display.
- The value can be modified with the UP and DOWN arrows.
- Press SET to enter any new values.
- Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

BUZZER

In the event of alarm or error condition, the internal buzzer is activated. To silence the buzzer, press and hold the SET and Down keys for 2 seconds.

LED INDICATIONS

- OUT = Indicates that the heater is on.

DISPLAY MESSAGES

In normal operation, the sensor temperature will be shown on the display. In case of alarm or error, the following messages will be shown:

- Er = Memory Error
- -- = Short-Circuit Probe Error (Disconnects output).
- oo = Open Probe Error (Disconnects output).

CONTROLLER OPERATION:

Once the controller reaches set point, the heater will turn off and will not turn on again until the temperature falls 5°F below the set point.

The controller will sound an audible alarm if the temperature at the sensor exceeds 15°F above the set-point.

TROUBLESHOOTING GUIDE

Please read this guide prior to contacting OMEGA. This guide is designed to answer the most commonly asked questions. If you are unable to identify the problem or need additional assistance, please contact us at 1-800-USA-HEAT.

Controller does not function

1. Check fuse: Unplug the unit from its power source. Remove the fuse and check its continuity. If the fuse is defective, replace it with an Class CC 15 amp fuse. Fuses may be obtained from most electrical supply houses.

2. Check power source: Using a voltmeter, test the power source and assure correct voltage is present.

3. Check thermocouple: Using a thermocouple meter, test the sensor to assure proper function.

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.

M-4326A/0406
PN: 11692-01 Rev 0