



Thermoline
S C I E N T I F I C

H I G H E R S T A N D A R D S I N S C I E N C E

OPERATING INSTRUCTIONS FOR:

***LABORATORY WARMING
TRAY (DIGITAL)
MODELS:
TWT-D***

WITH OMRON E5CC CONTROL



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INTRODUCTION:

Thank you for selecting this equipment from the large range of products manufactured in Australia by Thermoline Scientific.

Please take the time to read this manual before using the equipment; it contains information that will allow you to understand how the equipment operates, what it can and cannot do, how to operate the controls, and how to clean and maintain the equipment.

Incorrect operation or use can cause harm or damage to the equipment, therefore it is very important that you read, understand, and implement the instructions, to ensure reliable operation.

Ensure that the manual is kept in a safe place that is accessible for future reference.

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UNPACKING:

Remove the equipment from the packing material and check that delivery is complete. Delivery should include the following:

- 1 x Warming Tray
- Operating Instructions.
- Electrical mains cable.

Retain the packing materials until the equipment has been thoroughly tested.

Notify the detail of any damage to your supplier or to Thermoline Scientific without delay.

USE & FUNCTION:

The Thermoline Digital Warming Tray is used to provide a convenient temperature controlled flat surface for use in drying microscope slides, warming of petrie dishes, etc.

Features:

- Large black anodised aluminium warming surface.
- Surface gently heated by heater silicone element attached to the underside of the heating plate.
- Temperature set by a digital temperature control with high temperature alarm.
- Protected from short circuit & overload by circuit breaker.

LOCATION & INSTALLATION:

LOCATION:

This section deals with the provision and connection of services that will be required for your equipment to function properly and advice on where to locate the equipment.

Place the equipment in a well-ventilated area on a firm surface in a location that has a stable ambient temperature. Note that the heated surface is not covered and will be affected by changes in surrounding ambient temperatures.

Ensure that the ventilation slots on the end of the case are not obstructed.

- 1. Suitable for indoor use only.**
- 2. The Warming Trays are not suitable for use with flammable solvents! They are fitted with components that may be a source of ignition.**
- 3. Not suitable for stacking.**
- 4. Not to be used in conjunction with large quantities of water. The introduction of water and the resultant water vapour could result in premature component failure.**

ELECTRICAL:

This equipment is suitable for connection to a standard 240 volt, 50Hz, supply. A dedicated outlet should be used for the supply, do not use power boards or the like. A 3-pin moulded plug is fitted as standard to the mains lead. A removable power lead plugs into the IEC socket at the rear of the case.

SPECIFICATIONS:

Electrical: 240 volts, 50 HZ. 65 Watts.
Temperature Range: Ambient plus 5°C to 60°C.
Temperature Control Accuracy: +/- 1°C

PRINCIPLE OF OPERATION

The Warming Tray is designed to be light weight and portable. It is ideally suited for laboratory bench top applications.

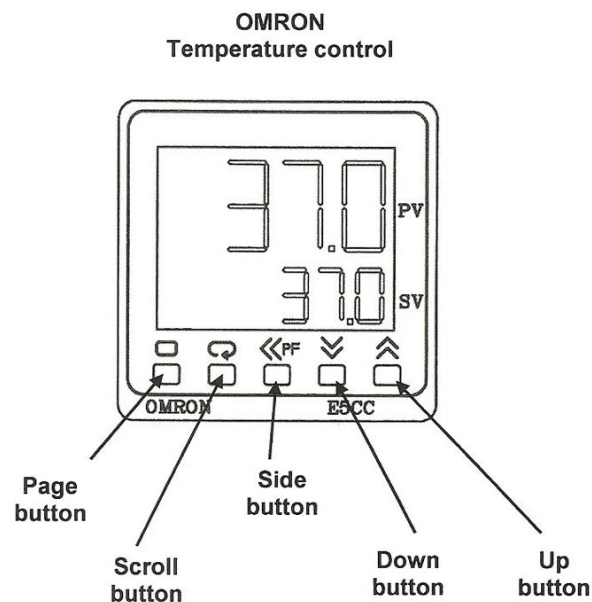
The body is insulated to minimise heat loss.

The desired operating temperature is set at the temperature controller. Silicone heating elements are attached to the underside of the flat surface to provide even heating to the plate. The temperature sensor provides an accurate measure of the temperature on the plate.

The output of the temperature control switches the heating element by means of a solid state relay for reliability.

EXPLANATION OF CONTROLS:

CONTROL PANEL LAYOUT:



Page button: Used to view calibration offset parameter.



Scroll button: Not used by the operator.



Side arrow: Used to move the cursor when changing temperature.



Down arrow: Used to decrease parameter setting.



Up arrow: Used to increase parameter setting.

TEMPERATURE CONTROL:

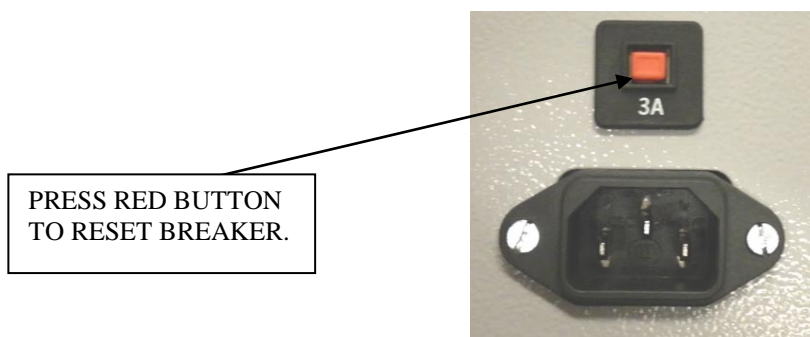
The temperature control is an Omron E5CC microprocessor based instrument with digital indication of set temperature and operating temperature.

The instrument has been factory configured for range, sensor type, and engineering parameters for optimum control. Limited access to the control parameters is available. The operator can alter the temperature set point and has access to a parameter used for calibration purposes.

CIRCUIT BREAKER:

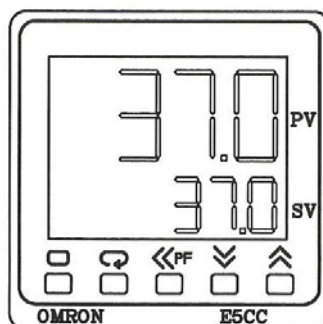
The warming tray is protected by from short circuit and overload by a miniature circuit breaker at the rear of the case.


In case of a failure the operator can press the red button to reset the circuit breaker. If the circuit breaker continues to trip it may indicate that an electrical fault exists. Switch off the power and consult your electrician or Thermoline.





OPERATING THE EQUIPMENT:

1. Locate the Warming Tray as previously described in “Location”, plug the mains lead into the IEC socket at the back of the case and into the power supply. Turn on the power point.
2. The temperature control will go through a short warm up period where all segments of the display will be on, before indicating the set temperature (SV) on the lower display and oven temperature (PV) on the top display.
3. **TO CHANGE THE SET TEMPERATURE:**



- Use the  button to move the cursor, the digit will flash indicating that it can be changed.

- Use the  or  arrows to change the temperature. When the desired temperature is set leave for a few seconds and the digits will stop flashing to confirm entry.


- OVER TEMPERATURE FAULT:** The temperature control has been configured with an automatic over temperature alarm. In case of a malfunction the alarm will turn off the heating when the warming tray temperature is more than 2°C above the set temperature.

SENSOR CORRECTION:

There are a number of factors that will affect the accuracy of the temperature displayed in relation to the actual temperature of the warming tray, these include the following:

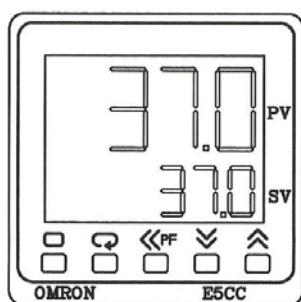
- Product load on the warming tray (the load should be distributed evenly across the plate).
- Location of the sensor (the temperature sensor can never be placed in the centre of the warming tray because it could be damaged).
- Changes in ambient temperature may affect the uncovered warming tray surface.

Because of the above factors it may be possible to have an error between the temperature displayed and the temperature measured on the warming tray. For this reason the Omron temperature control has a parameter that can be used to correct the temperature displayed.

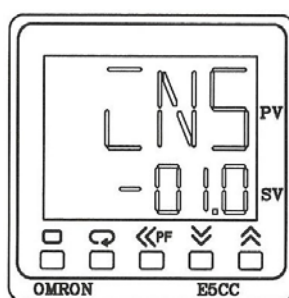
This sensor correction parameter is displayed as .

In simple terms this parameter adds or subtracts a correction value to the displayed temperature to make it read the correct temperature. The calibration parameter can be accessed as follows:

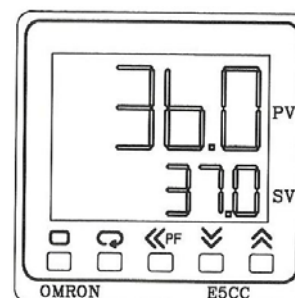
- Prior to any calibration of the temperature display ensure that the equipment used to measure the oven temperature has a current certificate of calibration to a traceable source, and that you are confident that it is accurate.



Press the page button to access the sensor correction parameter.



Use the up or down arrow to enter the sensor correction value.



Allow the digit to stop flashing and the screen will display the adjusted value.

In the example above the warming tray temperature displayed (PV) is 37.0°C. If a certified reference instrument measured 36.0°C we would need to correct the temperature by -1.0°C (note that the sensor correction parameter is accurate to 1 decimal place).

MAINTENANCE

The Thermoline Scientific Warming Tray requires no routine maintenance other than normal levels of cleanliness.

The external case and the heated surface may be wiped clean using a damp, soft cloth when the surface is at room temperature.

Caution! Care should be taken when cleaning the black anodised aluminium surface. Do not use metal tools or abrasive materials to clean the surface otherwise the surface may be scratched.

Not suitable for immersion in water!

TECHNICAL ASSISTANCE

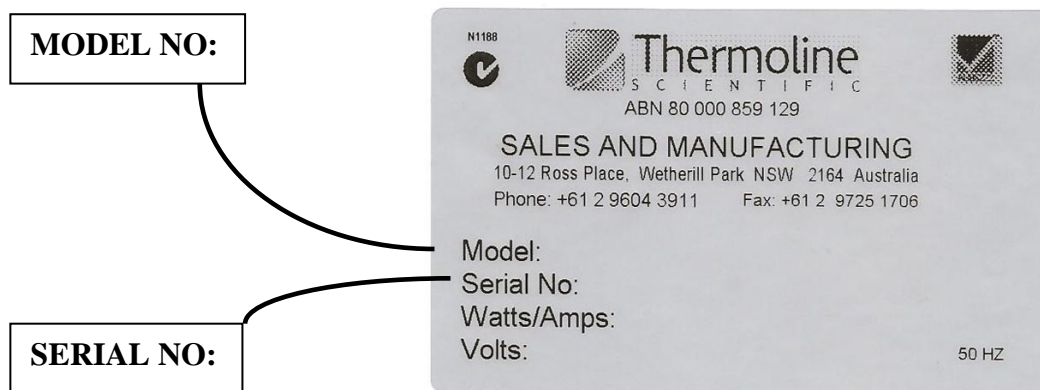
If you require additional operational or technical information regarding this equipment please contact:

Thermoline Scientific
Customer Service Division
Telephone: 61 2 9604 3911
Facsimile: 61 2 9725 1706
Email: thermoline@thermoline.com.au

WARRANTY:

Have the following information available when you contact the service department:

- Model number and serial number. This is generally found on the exterior of the cabinet in the form of a stick-on label.



- The company name, address, contact name, contact phone number.
- A brief description of the problem.

All warranty claims must be reported to, and agreed to by a Thermoline representative prior to any work being carried out.

Standard 12 month Warranty

Thermoline Scientific Equipment Pty Ltd ABN 80 000 859 129 (“Thermoline”)

Thermoline warrants to the original purchaser that this product will perform to its product specification for a period of 12 months from date of purchase, provided that the installation of the product has been carried out in accordance with the latest version of the manufacturer's instructions and further provided that the use of the product complies with that specified in the relevant specification. Thermoline is not responsible for any loss or damage arising from incorrect usage, usage outside the suitability of the product as stipulated in the manufacturer's instruction, damage caused by accident, fire, flood, act of God or failure to properly install, operate or maintain the goods in accordance with the printed instructions provided.

The following statement applies only to product sales that fall within the definition of a Consumer Sale set out in the Australian Consumer Law contained within the Competition and Consumer Act (Cth) 2012:

‘Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.’

Notwithstanding the preceding clause and to the extent permissible by law, the liability of Thermoline is limited, in relation to the warranted product and at the option of Thermoline to:

- replacing the product or the supply of equivalent product;
- the repair of the product;
- the payment of the cost of replacing the product or of acquiring equivalent product; or
- the payment of the cost of having the product repaired.

To the extent permitted by law, all other warranties whether implied or otherwise, not set out in this Warranty are excluded and Thermoline is not liable in contract, tort (including, without limitation, negligence or breach of statutory duty) or otherwise to compensate the Purchaser for:

- any increased costs or expenses;
- calibration/certification services;
- any loss of profit, revenue, business, contracts or anticipated savings;
- any loss or expense resulting from a claim by a third party; or
- any special, indirect or consequential loss or damage of any nature whatsoever caused by Thermoline's failure in complying with its obligations or the purchaser's failure due to accident damage, impact, misuse or negligence.

The benefits given to the purchaser in this Warranty are in addition to other rights and remedies under a law in relation to the products or services to which this warranty applies.

This warranty applies only to products purchased and installed in Australia and does not cover any consumable items e.g. filters, light globes, ultrasonic nebulizers. The warranty does not extend to labour and freight costs where the warranted product is located outside Australia.

To make a warranty claim, contact Thermoline on 02 9604 3911 or service@thermoline.com.au.