

Holland  
Green  
Science

A large version of the Holland Green Science logo, consisting of the text 'Holland Green Science' in blue and a stylized orange leaf to the right.

10301001  
Thermotita  
Water Bath

# User Manual

## Table of Contents

<b>I. Disclaimer &amp; Warranty .....</b>	<b>3</b>
<b>LIMITED WARRANTY &amp; DISCLAIMER .....</b>	<b>3</b>
<b>LIMITATION OF LIABILITY.....</b>	<b>6</b>
<b>II. Safety .....</b>	<b>7</b>
<b>III. Water Bath Introduction.....</b>	<b>9</b>
3.1 Proper Use .....	9
3.2 After Sales Support.....	9
<b>IV. Technical Specifications.....</b>	<b>10</b>
<b>V. Standards and Conformity.....</b>	<b>11</b>
<b>VI. Inspection. ....</b>	<b>11</b>
6.1 Packing List .....	11
<b>VII. Installation Requirements.....</b>	<b>12</b>
<b>VIII. Operating Instructions .....</b>	<b>13</b>
8.1 Display introduction.....	13
8.2 Command Key's Introduction .....	13
8.3 Temperature Controller Detailed Operation.....	14
8.3.1 Switch On .....	14
8.4 Setting of Parameters .....	14
8.4.1 Time Settings.....	14
8.5 Temperature Setting .....	14
8.6 Start / Stop Operation .....	15
8.7 Delay of Heating Cycle Start .....	15
8.8 Alarm / Faults.....	16
<b>IX. Calibration .....</b>	<b>17</b>
9.1 Probe Calibration .....	17
9.2 Other Parameters Function in Menu .....	18
<b>X. Faults Diagnosis .....</b>	<b>19</b>
<b>XI. Maintenance and Cleaning .....</b>	<b>20</b>

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For claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

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## II. Safety



### **IMPORTANT Safety Items to be Observed.**

### **Safety Warnings**

#### **! DANGER (may cause serious damage to property and or casualties)**

1. Please carefully read this User Manual prior to operating the instrument and observe the instructions on safe operation.
2. The power source must be grounded reliably and away from any sources of electromagnetic interference.
3. Confirm that the voltage and frequency of the power supply matches the specified voltage and frequency specified prior to use.
4. The instrument should be operated on an independent power outlet.
5. Do not allow the instrument to be plugged in or unplugged whilst the power switch is in the on position.
6. Do not modify the power cord.
7. The working environment must be free of any flammable, explosive, volatile or corrosive substances.
8. The instrument is deenergised only when the power cable is disconnected from the power source.
9. This instrument is for indoor use only.
10. The instrument should be operated in a low humidity, well ventilated dust and water free environment, without direct sunshine or an intense magnetic, light or heat source.
11. Ensure that the instrument and its accessories are free of any potential defects.
12. Ensure that the instrument is secured tightly, and only standard accessories supplied by the manufacturers are used with this instrument.

#### **! WARNING (may cause property damage or personal injury)**

13. Prevent water from splashing on the electrical elements of this instrument.
14. Before assembly, disassembly, cleaning or maintenance, the power source must be disconnected.
15. It is Prohibited to place Flammable, Explosive, Volatile or Corrosive substances into the Instrument.

#### **! ATTENTION (may affect operational performance or service life)**

16. When pulling the power plug out from a power source, do not pull out using the power cord directly.
17. Only accredited and qualified professional repair technicians can open the instrument or conduct required repairs. Persons performing repairs on the instrument other than those selected or approved by the Company shall operate to void any warranty contained hereinabove for the product.
18. The 304 Stainless Steel liner is Not Acid Resistant, please adhere to advised Anti-Corrosion measures and NEVER use Acidic media within the Oven to prevent damage
19. Disconnect the instrument from the power before filling or emptying liquid.



## III. Water Bath Introduction

- The outer shell of bath's water tank is made of high-quality steel plates and the surface is polymer coated.
- The internal liner, top cover and shelf are all made of optimal corrosion-resistant stainless steel.
- The bottom of the water bath tank has a U-type electrical heating tube that is directly immersible into water and reduces heat and energy loss.
- The interlayer between the outer shell of the water bath and the internal liner is insulated with a hard polyamine resin.
- The power switch is located within the temperature control panel on the right side of the water bath.
- The water bath's control panel consists of a temperature-regulation knob, a heating and tracking alarm indicator and a digital temperature display.
- The temperature control uses micro-computer technology thus making temperature control more precise and reliable.



### 3.1 Proper Use

This water bath is to be used for precise temperature keeping and auxiliary heating within by industrial and mining enterprises, colleges and universities, scientific research institutes and various labs, etc. This instrument is for non-residential use only.

### 3.2 After Sales Support

If problems are encountered or technical assistance support is required, when installing or using the instrument, please immediately contact the service department at [serviceusa@hollandgreenscience.com](mailto:serviceusa@hollandgreenscience.com). The company may provide technical assistance

and information regarding the instrument or equipment or service without charge at its sole discretion. Buyer assumes sole responsibility for any reliance on or use of such assistance and information, and the company makes no warranty thereon.

Upon contact the following information is required to be provided  
Product serial number (located on rear panel instrument nameplate)

- Warranty card
- Description of issue or problem (i.e., software or hardware)
- Method and or operating steps you have undertaken towards resolution.
- Your contact details inclusive of telephone number and email address.

For claims under the warranty please contact your local supplier. You may also send the instrument directly to manufacturer, enclosing the invoice copy and by giving reasons for the claim.

#### IV. Technical Specifications.

<b>Models</b>	10301001
<b>Product Name</b>	Thermotita 27
<b>Power</b>	1000W
<b>Temperature Control Range</b>	RT+5~100°C
<b>Temperature Fluctuation</b>	± 0.2°C
<b>Tracking Alarm</b>	≤2°C
<b>Mains Voltage</b>	120V/60Hz
<b>Working Room Dimensions</b>	500×300×200 (mm)
<b>Exterior Dimensions</b>	77 x 44 x 47 (cm)
<b>Bath Volume</b>	20 L

## V. Standards and Conformity.

<b>Construction in Accordance with the following Safety Standards:</b>
<b>UL 61010-1:2012</b>
<b>C22.2#61010-1-12:2012</b>
<b>UL 61010-2-010:2019</b>
<b>CSA C22.2#61010-2- 010:2019</b>
<b>Construction in Accordance with the following EMC Standards:</b>
<b>EN 61326-1</b>

## VI. Inspection.

### 6.1 Packing List

Unpack the equipment carefully and check for any damage which may have arisen during transport. In the event of identified damage, please contact the supplier / manufacturer for technical support.

- Carefully unpack the shipping container.
- Remove the water bath and place it onto a clean, level surface / bench.
- Check the instrument and accessories against the below 'Packing List'.

If the instrument or accessories are found to be incorrect, or the accessories are incomplete or abnormal, please contact the supplier/ manufacturer.

<b>Item Description.</b>	<b>Quantity.</b>
Main Unit	1pcs
Shelf	1pcs (SUS304)
Power cord	1pcs
outlet	1pcs
Quick setup card	1pcs



**Note:**

If you find any visible damage, please do not connect the instrument to a Power supply.

## VII. Installation Requirements

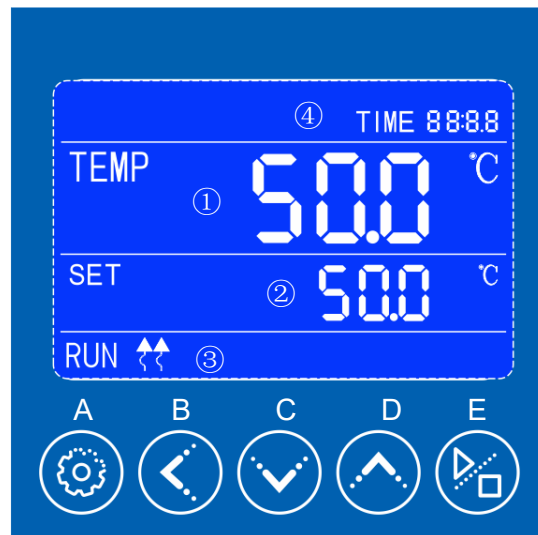
The Water bath should be installed as per the following conditions:

1. Set up only on a bench-top or worktable that is dry, clean and stable with a flat horizontal surface.
2. Ensure the required ventilation clearance space surrounding the instrument is 30-50 cm. (minimum).
3. Room temperature required is between 5°C (41°F) and 40°C (104°F), and relative humidity maximum of 85%.






## VIII. Operating Instructions

### 8.1 Display introduction

- ① **TEMP area (PV):** Showing measured temperature.
- ② **SET area(SV):** Showing set temperature.
- ③ **Heating Lamp:** It lights up when it has heat output.
- ④ **TIME:** Time display window, it will display running time or parameter value.



### 8.2 Command Key's Introduction

- A**  Used for setting parameters, the parameter setting mode could be quit by pressing the set button for more than 3 seconds or more.
- B**  Used for moving the digits of setting value, internal parameters and checking ambient temperature.
- C**  Used for setting value, modification of various parameters, or start / stop auto-tuning.
- D**  Used for modifying set value, internal parameters or to check the remaining period.
- E**  Press it for 3 seconds for operating or stopping the controller

## 8.3 Temperature Controller Detailed Operation

### 8.3.1 Switch On





1. Connect power according to the power outlet
2. Turn 'ON' the instrument by pressing the '**ON/OFF**' button and the screen will light up. Display shows the 'initialization sequence' prior to the instrument being ready for use.

**NOTE:**

Every time you turn 'ON' the instrument it '**beeps intermittently**', the icon of a visual alarm and the word "end" will appear on the display indicating that a heating cycle has been done before. Press any button to silence.

## 8.4 Setting of Parameters




### 8.4.1 Time Settings

1. After confirming temperature, the last value of the set time (Timer) will start to flash. Set the desired value (hh:mm) by pressing the  or  keys. It is possible to move faster between the digits by using the  button.
2. Confirm the set value with another press of the  button.



**NOTE:** The value "00:00" indicates the operating mode is 'continuous', meaning once you start the operating cycle by the START / STOP button, the system will continue to maintain the set temperature until it is manually stopped.

3. If you set the timer, such as one hour, the instrument will reach the set temperature and maintain it for one hour.

## 8.5 Temperature Setting









1. When the instrument is switched on, press the  button one time and the set temperature value will start to blink. Set the desired temperature value (in Celsius degrees) by pressing the up and down arrow keys.
2. The  button works for a quick movement between the digits.
3. Confirm the set value with another press of  button.

## 8.6 Start / Stop Operation

1. After setting the operating parameters, press  button for (about 4-5 seconds) to start the heating cycle/cooling process with defined time in hh:mm or continue the process for (00:00). When the word "END" disappears on the right corner of the screen, the message "RUN" will appear in the left bottom and the system will display issues like contemporary, timer, temperature measured inside the chamber.
2. At any time, you can always manually stop the cycle by pressing the  button for (4-5 seconds).
3. Once the timer runs out or after a manual stop, the instrument beeps intermittently and the icon of the visual alarm and the word "end" appears on the display. Press any button to silence.

**NOTE:** the acoustic signal will not end until it is stopped by the operator, but the heating cycle will be terminated so the samples inside the instrument will remain exposed to the internal temperature of the chamber.

## 8.7 Delay of Heating Cycle Start

1. It is possible to set a delay (hour and minutes) of the heating cycle start.  
Simultaneously Press  and  for a few seconds until the time position shows "LK 0000" confirm the "0000" password pressing one time . On the top right part of display the parameter "dy" (delay) appears close to value 00:00.
2. Set the desired delay value (hh:mm) by pressing  or  keys. For quick movement between the digits use the  button. Confirm the set value with another press of  button. The display comes back to the standby screen.
3. Pressing the  button with long pressure (4-5 seconds) the instrument starts the work cycle, but it doesn't immediately heat: the word "end" and the set delay time alternately blink on the top right part of display, counting the wait time until the real starting of heating. Once the delayed time is passed the instrument starts to heat and the regular timer appears on the display.

## 8.8 Alarm / Faults

The oven has a built-in over temperature protection circuit. If the oven's temperature overshoots, the controller will enter an alarm mode that disables all heating elements to protect your samples.

When in alarm mode, a red alarm indicator will display on the screen. The oven will automatically resume operation when the temperature has dropped back below the overshoot threshold.

Setting the temperature set point higher will also resume the heating function. If your oven alarm is sounding due to an elapsed timer, press the any key to mute.



## IX. Calibration

### 9.1 Probe Calibration

Follow the instructions below to adjust the temperature readout.

These steps are only necessary in the event there is a discrepancy between the display and measurements taken with an alternate device.



**For Example:**

A thermometer placed inside the oven with a different measurement than the controller.


**Please Note:**


Laser probe measurements will be inaccurate without compensating for emissivity.

Refer to your laser probe's user manual.

1. Simultaneously press  and  for few seconds until the time position shows "LK 0000"

Press  to set LK 0003

Press  three times, you can see Pb, this is temperature offset on single point.

After set of the Pb value, press  to exit.

## 9.2 Other Parameters Function in Menu

Below are the passwords and access sequence to various parameters/ functions:

PASSWORD	FUNCTION / PARAMETER	DESCRIPTION
0000	dy	Delay of heating cycle start
0003	tm	Safety temperature limiter for samples protection
	Po	Restart mode after absence of power supply
	AL	Temperature range for over temperature alarm
	Pb	Temperature offset on single point
	PK	Temperature offset on the entire ramp
	PA	Temperature offset of the room temperature probe

Whilst the oven arrives pre-calibrated from the factory, certain adjustments may be necessary for optimal performance.

**Please Note:** Adjustments will affect your oven settings!

It is highly recommended to writing down all factory settings prior to any adjustment so they may be reset in the event of undesirable operation.

## X. Faults Diagnosis

<b>Problem</b>	<b>Possible Cause</b>	<b>Solution</b>
<b>No Power</b>	The power plug is not plugged in or power not switched ‘	Check the power plug is inserted, and power switched ‘ON
	Fuse has failed.	Replace the fuse.
<b>Cabinet Temperature Does Not Increase</b>	The set temperature is low.	Adjust the set temperature.
	The electric heater is not working.	Replace the electric heater.
	The temperature control instrument is not working	Replace the temperature control instrument.
	The cyclic fan is not working	Replace the fan.
<b>Set Temperature Variance to the Cabinet Temperature</b>	The temperature sensor is not working	Change the temperature sensor.
	The fine-tuning potentiometer for setting temperature appears not well adjusted.	Adjust the potentiometer.
<b>Over-Temperature Alarm is Abnormal</b>	The set temperature is low.	Adjust the set temperature.
	The temperature control instrument is not working.	Replace the temperature control instrument.

## XI. Maintenance and Cleaning

Please operate and maintain the instrument properly and in accordance with this manual's instructions so, that it remains in a good working state, which can extend the service life of the instrument.

During a routine service, keep the product dry and clean, removing spilled liquid quickly, clean the outer surface with a non-grinding cleaner, and do not connect the power supply until all surfaces are dry.

If liquid or moist solid enters the instrument, please disconnect the power supply quickly and leave off, and contact a service technician, or the manufacturer / supplier for more advice.

The power supply must always be disconnected before any cleaning and or maintenance work commences and please use the recommended cleaning methods for this instrument. When cleaning the instrument, please wear applicable PPE and protective gloves.

Always keep the internal and external of the water tank clean.

To prevent chemical reactions, NEVER wipe the outer shell with any chemical solutions.

When the instrument is not to be used for a long period, cover with a plastic dust shroud and place into a dry room to prevent the temperature control instrument from moisture.



### **Cautions:**

This instrument cannot be cleaned with chemical solutions.

Prior to an instrument repair the instrument must be cleaned while the contamination of hazardous substances must be avoided, and the instrument must be put back into the original packaging box for shipping.

When the instrument is not used for a long period please store with a dust cover, the power 'Off', in a dry, clean, level and stable place at normal temperature.

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