



10305001/10305002 Hephaestus 124/222 **User Manual**



| I. | Disclaimer & Warranty 3 | | | | |
|-------|--|--|--|--|--|
| LIMIT | ED WARRANTY & DISCLAIMER 3 | | | | |
| LIMIT | ATION OF LIABILITY | | | | |
| II. | Safety7 | | | | |
| III. | Hephaestus 124 and 222 Introduction9 | | | | |
| 3.1 | After Sales Support10 | | | | |
| 3.2 | Proper Use10 | | | | |
| IV. | Technical Specifications11 | | | | |
| V. | Standards and Conformity12 | | | | |
| VI. | Inspection13 | | | | |
| 6.1 | Packing List13 | | | | |
| VII. | Installation Requirements14 | | | | |
| VIII. | Operating Instructions14 | | | | |
| 8.1 | Display14 | | | | |
| 8.2 | Switching on the Instrument14 | | | | |
| 8.3 | Basic Mode (PROG 0) or Program Mode (PROG 18) | | | | |
| 8.4 | Recall and Program Selection15 | | | | |
| 8.5 | Programming16 | | | | |
| | 8.5.1 Modification of Working Parameters - PROG 016 | | | | |
| | 8.5.2 Modification of Working Parameters - PROG 1817 | | | | |
| | 8.5.3 Start/Stop of a Program | | | | |
| | 8.5.3 User Setting Menu | | | | |
| | 8.5.4 Settings Date and Time | | | | |
| | 8.5.5 Frequency of Data Recording20 | | | | |
| | Extended User Settings (Right Arrow)21 | | | | |
| | Safety Temperature Limiter for Sample Protection21 | | | | |
| | Restart Mode After Absence of Power Supply22 | | | | |
| | Over Temperature Alarm | | | | |
| |) Temperature Offset | | | | |
| | 1 Delay - Heating Cycle Start23 | | | | |
| | 2 Repetition of Selected Program | | | | |
| 8.13 | 3 Data Downloads and USB Pen Capability24 | | | | |
| IX. | Fault Diagnosis25 | | | | |
| Х. | Maintenance and Cleaning26 | | | | |



I. Disclaimer & Warranty

- The intellectual property rights for this manual belong to Holland Green Science Corporation (hereinafter referred to as "the Company").
- Products of the company are under the patent protection of China and other countries and regions (inclusive of obtained patents and patents currently under application).
- The company reserves the right to change product specifications without notice.
- The contents of the manual are subject to change without notice.
- The manual's content must not be copied, extracted, or modified in any form without the Company's permission.

LIMITED WARRANTY & DISCLAIMER

Products sold by the Company are intended solely for the use(s) specified by the manufacturer and are not to be used for any other purposes including, but not limited to, unauthorized commercial purposes. Buyer warrants and represents that Buyer will properly test, use, qualify, and/or validate each Product for intended use, and, to the extent authorized, manufacture and market any final articles made from the Company's Products in accordance with the practices of a reasonable person who is an expert in the field, and in strict compliance with all applicable national, state and local laws and regulations. Buyer acknowledges and understands that the purchase of Products only conveys to Buyer the non-transferable right for only the Buyer to use the Products purchased in compliance with the applicable manufacturer's Published User Statement, Limited User Statement, or Limited License, if any. While this manual contains certain representations of the potential dangers from the instrument or equipment, Buyer is solely responsible for conducting any research necessary to learn the hazards involved for any of its intended uses of the instrument or equipment purchased from the Company and to properly warn its customers, employees and other personnel who may be exposed to such instrument or equipment of any risks involved in using or handling the instrument or equipment.

The Company warrants that this product will operate or perform substantially in conformance with the Company's published specifications and be free from defects in material and workmanship, when subjected to normal, proper and intended storage and usage by properly trained personnel, for the duration of the manufacturer's warranty period set forth in this product documentation, published specifications or package inserts. If a manufacturer's warranty period is not specified in the product documentation, published specifications or package inserts. If a manufacturer's warranty period is not specified in the product documentation, published specifications or package inserts, the warranty period shall be one (1) year from the date of Bill of Sale to Buyer for equipment, and the earlier of any stated expiration dates or ninety (90) days for all other products (the "Warranty Period"). The Company agrees during the Warranty Period, to repair or replace, at the



Company's option, defective Products so as to cause the same to operate in substantial conformance with said published specifications; provided that Buyer shall (a) promptly notify the Company in writing upon the discovery of any defect, which notice shall include the product model and serial number (if applicable) and details of the warranty claim; and (b) after the Company's review, the Company will provide Buyer with service data and/or a Return Material Authorization ("RMA"), which may include biohazard decontamination procedures and other product-specific handling instructions, then, if applicable, Buyer may return the defective Products to the Company with all costs prepaid by Buyer. Replacement parts may be new or refurbished, at the election of the Company. All replaced parts shall become the property of the Company. Shipment to Buyer of repaired or replacement Products shall be made in accordance with the Delivery provisions of the Terms & Conditions agreed to by the purchase of this product. Consumables are expressly excluded from this warranty.

Notwithstanding the foregoing, Products supplied by the Company but not manufactured by the Company are not warranted by the Company, and the Company disclaims all warranties associated with the accuracy of any original manufacturer or third-party supplier Product information, but the Company agrees to assign to Buyer any warranty rights in such Product that the Company may have from the original manufacturer or third-party supplier, to the extent such assignment is allowed by such original manufacturer or third-party supplier.

In no event shall the Company have any obligation to make repairs, replacements or corrections required, in whole or in part, as the result of (i) normal wear and tear, (ii) accident, disaster or event of force majeure, (iii) misuse, fault or negligence of or by Buyer, (iv) use of the Product in a manner for which they were not designed, (v) causes external to the Product such as, but not limited to, power failure or electrical power surges, (vi) improper storage and handling of the Product or (vii) use of the Product in combination with equipment or software not supplied by the Company. If the Company determines that Product for which Buyer has requested warranty services are not covered by the warranty hereunder, Buyer shall pay or reimburse the Company for all costs of investigating and responding to such request at the Company's then prevailing time and materials rates. If the Company provides repair services or replacement parts that are not covered by this warranty, Buyer shall pay the Company therefor at the Company's then prevailing time and materials rates.

ANY INSTALLATION, MAINTENANCE, REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE PRODUCT PERFORMED BY ANY PERSON OR ENTITY OTHER THAN THE COMPANY WITHOUT THE COMPANY'S PRIOR WRITTEN APPROVAL, OR ANY USE OF REPLACEMENT PARTS NOT SUPPLIED BY THE COMPANY, SHALL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE PRODUCT.



THE OBLIGATIONS CREATED BY THIS WARRANTY STATEMENT TO REPAIR OR REPLACE A DEFECTIVE PRODUCT SHALL BE THE SOLE REMEDY OF BUYER IN THE EVENT OF A DEFECTIVE PRODUCT. EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY STATEMENT, THE COMPANY DISCLAIMS ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, ORAL OR WRITTEN, WITH RESPECT TO THE PRODUCTS, INCLUDING WITHOUT LIMITATION ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR USE. THE COMPANY DOES NOT WARRANT THAT THE PRODUCTS ARE ERROR-FREE OR WILL ACCOMPLISH ANY PARTICULAR RESULT.

NOTHING IN THIS MANUAL OR IN THE TERMS AND AGREEMENT AGREED TO AT THE TIME OF PURCHASE SHALL BE CONSTRUED TO PROVIDE FOR THE TRANSFER, ASSIGNMENT OR ALIENATION OF THE LIMITED WARRANTIES PROVIDED BY THE COMPANY HEREIN TO ANY OTHER PARTY OTHER THAN BUYER, INCLUDING BUT NOT LIMITED TO, SUCCESSORS, HEIRS, SUBSIDIARIES OR ANY OTHER THIRD PERSON.

THE WARRANTIES IDENTIFIED ABOVE ARE THE SOLE AND EXCLUSIVE WARRANTIES WITH RESPECT TO THIS PRODUCT AND ARE IN LIEU OF ALL OTHER WARRANTIES. EXPRESS OR IMPLIED. ALL OTHER WARRANTIES ARE EXPRESSLY DISCLAIMED, INCLUDING, WITHOUT LIMITATION, THOSE OF NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A SPECIFIC PURPOSE OR USE (WHETHER ARISING FROM STATUTE, OR OTHERWISE IN LAW, OR FROM A COURSE OF DEALING, OR USAGE OF TRADE). THIS WARRANTY IS NOT TRANSFERABLE FROM THE ORIGINAL PURCHASER TO A SUBSEQUENT OWNER. FURTHER, THE COMPANY IS NOT LIABLE IN CASES OF DELIBERATE, NEGLIGENT OR ACCIDENTAL MISUSE OF THE PRODUCTS, USE WITH INAPPROPRIATE REAGENTS OR CONSUMABLES, DAMAGE CAUSED BY DISASTER, REPAIR OR MODIFICATIONS DONE BY ANYONE OTHER THAN THE COMPANY. THE COMPANY DOES NOT WARRANT THAT THE PRODUCT WILL NOT INFRINGE THE INTELLECTUAL PROPERTY RIGHTS OF A THIRD PARTY EITHER ALONE OR IN COMBINATION WITH OTHER PRODUCTS OR IN THE OPERATION OF ANY PROCESS. THE COMPANY'S TOTAL LIABILITY FOR BREACH OF THESE WARRANTIES SHALL BE LIMITED TO THE GROSS PURCHASE PRICE FOR THE PRODUCT AS STATED IN THE RELEVANT INVOICE OR ORDER UNDER WHICH THE ACTIVITY GIVING RISE TO LIABILITY ARISES. UNDER NO CIRCUMSTANCES SHALL THE COMPANY BE LIABLE FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE DAMAGES (INCLUDING LOSS OF BUSINESS OR PROFITS) UNDER ANY THEORY OF LIABILITY HEREUNDER.

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.



LIMITATION OF LIABILITY

NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, THE LIABILITY OF THE COMPANY UNDER THESE TERMS AND CONDITIONS (WHETHER BY REASON OF BREACH OF CONTRACT, TORT, INDEMNIFICATION, OR OTHERWISE, BUT EXCLUDING LIABILITY OF THE COMPANY FOR BREACH OF WARRANTY (THE SOLE REMEDY FOR WHICH SHALL BE AS PROVIDED UNDER THIS SECTION) SHALL NOT EXCEED AN AMOUNT EQUAL TO THE LESSER OF (A) THE TOTAL PURCHASE PRICE THERETOFORE PAID BY BUYER TO THE COMPANY WITH RESPECT TO THE PRODUCT(S) GIVING RISE TO SUCH LIABILITY OR (B) ONE HUNDRED THOUSAND DOLLARS (\$100,000), WHICHEVER IS LESS.

With respect to any software products incorporated in or forming a part of the Product hereunder Buyer intends and agrees that such software products are being licensed and not sold, and that the words "purchase", "sell" or similar or derivative words are understood and agreed to mean "license", and that the word "Buyer" or similar or derivative words are understood and agreed to mean "licensee". Notwithstanding anything to the contrary contained herein, The COMPANY or its licensor, as the case may be, retains all rights and interest in software products provided hereunder. See the Terms & Conditions of purchase for details regarding such license.



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 while 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.

! ATTENTION (may affect operational performance or service life)

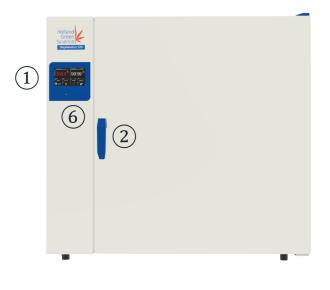
- 15. When pulling the power plug out from a power source, do not pull out using the power cord directly.
- 16. Only accredited and qualified professional repair technicians can open the instrument or conduct required repairs. Persons performing repairs on the instrument other than those selected or approved by the Company shall operate to void any warranty contained hereinabove for the product



- 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. Do Not Touch the Chamber Door, the Chamber Body, or the Surrounding Surface when the Set Temperature is Over 80°C (176°F) to avoid burns.
- 19. 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



III. Hephaestus 124 and 222 Introduction







| ① Control System | ② Opening / Closing Handle |
|------------------|----------------------------|
| ③ Shelf | ④ ON / OFF Button |
| ⑤ Power Outlet | (6) USB Port |
| | |

• ④, ⑤ are located at the back of the oven





3.1 After Sales Support

If problems are encountered or technical support is required when installing or using the instrument, please contact 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:

- Product serial number (located on the instrument nameplate)
- Description of issue or problem
- Method and / or operating steps you have undertaken towards resolution.
- Your contact details including telephone number and email address.

3.2 Proper Use

The instrument is designed for non-residential use and to be used in conjunction only with accessories recommended within this manual and by the manufacturer.



IV. Technical Specifications

| Model | 10305001 | 10305002 |
|-----------------------------------|--------------------|-----------------------|
| Product Name | Hephaestus 124 | Hephaestus 222 |
| Chamber Volume | 124L | 222L |
| Temperature Range | Ambient+10°C~200°C | / Ambient+18°F~392°F) |
| Temperature Stability | ±1°C | /±1.8°F |
| Display Resolution | 0.1°C | C / 0.1°F |
| Standard Quantity of Shelves | | 2 |
| Maximum of Shelves | 10 | 16 |
| Maximum Shelves Loading | 2 | 0Kg |
| Net Weight | 74 kg | 103 kg |
| Timer | 1~59 | 99mins |
| Internal Dimension (W*H*D, mm) | 520*495*450 | 650*650*500 |
| External Dimension (W*H*D, mm) | 810*750*625 | 940*905*695 |
| Electrical Requirement | AC110V,60Hz | AC220V,60Hz |
| Power Consumption | 1950W | 2250W |
| Uniformity at 100°C | ±2.5°C | ±2.5°C |
| Heat up Time to 100°C | 25 min | 25 min |



V. Standards and Conformity

Construction in Accordance with the following Safety Standards: UL 61010-1:2012 CSA C22.2#61010-1-12:2012 UL 61010-2-010:2019 CSA C22.2#61010-2-010:2019 Construction in Accordance with the following EMC Standards: EN 61010-1:2010 EN 61326-1:2013



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 serviceusa@hollandgreenscience.com.

The package includes the following items

| Туре | Item Description | Quantity |
|------------------|------------------------------|----------|
| Main Unit | Drying oven | 1 |
| Fittings | Stainless steel wire shelves | 2 |
| Quick Setup Card | Scan to download user manual | 1 |



VII. Installation Requirements.

- 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. The instrument should operate between 5°C (41°F) and 40°C (104 °F), and relative humidity maximum of 85%.

VIII. Operating Instructions

8.1 Display



8.2 Switching on the Instrument

Connect the power cord to a power outlet.

Turn on the instrument by pressing the button ON/OFF. The display will initialize up.





8.3 Basic Mode (PROG 0) or Program Mode (PROG 1...8)

Two operating modes are available:

- **Basic** (PROG 0): program with a single working step
- Programs (PROG 1...8): eight memorized programs, each consisting of 8 steps

Depending on the program selected the display will show one of the following main screens:



Basic PROG 0 - Main Screen

PROG 1...8 – Main Screen

8.4 Recall and Program Selection

To select the desired program, press the PROG key above

| SET | PROGRAM | | ESC | _ | CH | OOS | E PR(| og (| 8 | $\left[\right]$ | ОК |
|-------|------------------|----|------------|-------|-------|-------|-------|-------|-------|------------------|-------|
| | FIX MODE | | Step | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| NO PI | ROGRAM AVAILABLE | | ŀ | 80.0 | 150.0 | 180.0 | 185.0 | 200.0 | 200.0 | 200.0 | 200.0 |
| | | | (L) min | 99:59 | 99:59 | 99:59 | 99:59 | 99:59 | 0 | 0 | 0 |
| ESC | | ОК | . | 100% | 100% | 75% | 75% | 75% | 75% | 75% | 75% |



8.5 Programming

8.5.1 Modification of Working Parameters - PROG 0

From the main screen of the PROG 0 mode, press the highlighted keys to change, from left to right, the temperature and the timer

| 200.0°C 200.0°C Set FAN 200.0°C Set FAN 100% | 03 May 2021 20:21 04:50 Set hh:mm 04:50 PROG 0 PROG 0 | SET TEMP | ERATURE |
|---|--|---|---------|
| End | BET | ТІМЕ 5 9 ^{hh:mm} ок | |

To increase or decrease the values of the temperature and or time, use the + and - keys.

In all screens it is necessary to confirm the set value by pressing the 'OK' button.

NOTE:

To return to the previous screen without saving a modification, press 'ESC'.





8.5.2 Modification of Working Parameters - PROG 1...8

| 03 May 2021 20:21 | ESC | _ | CH | IOOS | EPR | OG | 8 | ſ | ОК |
|---|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200.0 [°] 04:50 ^{mm} | Step | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| | ₿ | 80.0 | 150.0 | 180.0 | 185.0 | 200.0 | 200.0 | 200.0 | 200.0 |
| Set C Set FAN Set hh:mm STEP 1 200.0 100% 04:50 PROG 1 | | 99:59 | 99:59 | 99:59 | 99:59 | 99:59 | 0 | 0 | 0 |
| | •• | 100% | 100% | 75% | 75% | 75% | 75% | 75% | 75% |

From the main screen, press PROG to access the menu

Select the required program to change by pressing the 'yellow highlighted' button and setting the corresponding digits using the numeric keypad. Confirm by pressing 'ENTER'.

For each individual program steps (1 to 8), it is possible to set the temperature (degrees Celsius) and the timer (minutes) by clicking on the green, red and pink buttons of the same screen.

Once the desired value has been set, confirm with 'ENTER' or go back to the previous screen without saving the changes by pressing 'ESC'.



| (\mathbf{L}) | SET TIME | 8 | STEP | 1 |
|------------------|----------|---|------|-------|
| RANGE | |] | | |
| 1 | 23 | 4 | 5 | ESC |
| 6 | 7 8 | 9 | 0 | - |
| | | • | - | ENTER |

NOTE:

If you do not want to use all the steps of the program you are editing, it is necessary to impose the end of the program to the instrument. To do this, simply set a time equal to zero in the next step to the last one you want to use.



8.5.3 Start/Stop of a Program

To start or stop a program respectively press the START or STOP key. The keys are the same in both the main screens (PROG 0 or PROG1...8).

| 200.0°° | 03 May 2021 20:21 | ⇔ Memory | 03 May 2021 20:21 |
|--|----------------------------------|--------------------------------|--|
| Set "C 200.0 Set FAN 100% End | Set hh:mm STEP 1 04:50 PROG 1 | Set C 200.0 Set FAN 100% | Set hhimm STEP 1 04:50 PROG 1 PROG |

The instrument then starts the set work cycle which can be one or more steps.

NOTE:

The timer countdown only starts when the set temperature is reached. T real = T set \pm 0.3 °C.

At any time, it is possible to check the work step and the program number as highlighted in blue below



NOTE:

It is always possible to consult the various parameters set within the steps of the program in use by clicking button highlighted in green, however be careful to only press '**ESC**' to return to the main screen.

If you press the '**OK**' key, the instrument will interpret the action as confirmation of the choice of a new program, therefore it will forcedly terminate the work cycle in progress.

When the program ends or is manually stopped, the word "**End**" appears on the main screen with an intermittent audible alarm signal, which can be silenced by pressing the button marked "**End**".



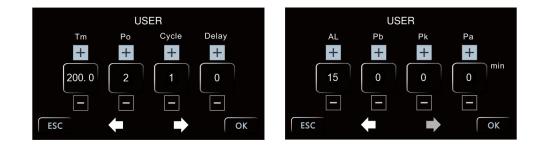


8.5.3 User Setting Menu

Press the 'Gear' icon and then 'USER'

| 200.0°c | 03 May 2021 20:21 | USER | SERVICE | ADMIN |
|-----------|----------------------------------|------|---------|------------|
| Set START | Set hh:mm STEP 1 04:50 PROG 1 | ESC | | ¢ * |







8.5.4 Settings Date and Time

SET TIME

 1
 2
 3
 4
 5
 ESC

 6
 7
 8
 9
 0
 +

 20??-??-??
 ??:?????
 ENTER

Press on any field of 'Date and Time' to access the menu

Set the date and time using the numeric keypad as per the format; **yyyy-mm-dd hh: mm: ss**

NOTE: It is necessary to set all the parameters (date and time) each time.

8.5.5 Frequency of Data Recording

Click on the highlighted key to modify the frequency with which the instrument records the data of the work cycle.



Using the numeric keypad to set a time (in minutes) from 1 to 255. Press **'ENTER'** to confirm.

NOTE:

The memory retains up to 2000 recordings. When this data limit is reached, the instrument will start to overwrite the same memory with new data, by erasing the oldest previous data record.

The recording frequency also defines the recording capacity in terms of duration (example Frequency= 60 minutes \rightarrow 2000 data x 60 minutes= 2000 hours= 83 days).

NOTE:

If a USB stick is connected to the instrument, recordings will save directly onto the USB stick and to the instrument's memory. The on-board data memory limit





of 2000 records remains, however, the USB stick will act as secondary memory and it is possible to write records up to the USB stick capacity

8.6 Extended User Settings (Right Arrow)

8.7 Safety Temperature Limiter for Sample Protection

The instrument has an alarm function to limit the maximum work temperature (**Tm**) so samples can be protected from an erroneous work temperature setting.

On the top left of the display, press the field '**Tm**' (temperature max)

Set the maximum temperature value required so the instrument does not exceed that set temperature during the work cycle. Pressing on the corresponding box and using the numeric keypad, press 'ENTER' to confirm or 'ESC' to return to the previous screen without saving.

Example

If the set temperature for the work cycle is 100 °C and the temperature limiter (Tm) is set at 70°C, the instrument will alarm and prevent an increase in temperature past the limit set.



8.8 Restart Mode After Absence of Power Supply

It is recommended to use the '**Restart'** mode of the instrument after a power supply absence (**Po**):

| Po VALUE | DESCRIPTION |
|----------|---|
| 0 | On return of the power supply, the instrument does not automatically resume the heating cycle. Please start the program to resume operation. |
| 1 | On return of the power supply, the instrument automatically resumes operation from the beginning of the heating cycle interrupted |
| 2 | On return of the power supply, the instrument automatically resumes operation at the very point of the heating cycle in which it was interrupted. |

Press 'ENTER' to confirm

8.9 Over Temperature Alarm

An 'Over Temperature' alarm function **(AI)** allows the setting of the temperature to limit when the temperature goes over so that an audible temperature alarm sounds and **(AI)** displays.

NOTE:

While adjustable by an operator, a factory pre-set has been applied and should not be changed.



8.10 Temperature Offset

This function permits the setting of an offset value temperature measurement.

NOTE:

Whilst adjustable by an operator, a factory pre-set has been applied and should not be changed.

| Po VALUE | DESCRIPTION |
|----------|--|
| Pb | Changing this parameter, you can correct the reading of PT100 sensor inside the instrument on one point temperature. The correction will therefore be attributable to one specific point. |
| Pk | Changing this parameter, you can correct the reading PT100 sensor inside the instrument over the entire temperature ramp, that is going to change the inclination of the ramp reading of the sensor. |
| Pa | Changing this parameter, you can correct the reading of environmental PT100 sensor installed on the instrument (only refrigerated versions) on only one temperature point. The correction will therefore be attributable to one specific point. |

8.11 Delay - Heating Cycle Start

This instrument function allows the setting of a delay at the start of the operating cycle (**Delay**) from 1 to 9999 minutes.



8.12 Repetition of Selected Program

This instrument function allows the repeat from 1 to 99 times of the selected program, function (**Cycle**).

NOTE:

It is possible to set a continuous repetition of a program, setting it in a continuous "loop", with the parameter **Cycle = 0**.

8.13 Data Downloads and USB Pen Capability

The instrument is equipped with a USB port for connecting a pen drive. By connecting a USB stick when the instrument is switched 'ON' (within an active or inactive work cycle), the automatic download of all the data that the machine has in memory commences.

NOTE:

If a USB stick remains connected to the instrument, data recordings upload directly to the USB in addition to the instrument's memory.

The format of the downloaded data will be **.txt** files. The data files are therefore completely "open", editable, and transferable to normal computer applications.



IX. Fault Diagnosis

| Fault | Possible Causes | Remedies |
|--|--|---|
| | Power plug not inserted. Power supply is not switched 'On | Check power plug is fully inserted into the socket. Check main power switch is 'ON' Check oven power is 'ON' |
| No Power Upon Start-up | | |
| | Power switch broken | Contact service |
| Abnormal Temperature Displaying | Sensor faulty / broken or the wiring is detached/ broken | Contact service |
| | Check if timing is set up and if the time is up. | Refer to the operation Instruction for setting the timing function. |
| No Temperature Increase | The controller is not working | Contact service |
| | Set temperature is lower than the internal temperature | Open the door until the internal temperature is lower than the set temperature. |
| Temperature Control Inaccurate (Large Static Difference) | The difference between room temperature and set temperature is less than 5 degrees Celsius. | Minimum temperature under control: ambient+5°C (9°F) |



X. Maintenance and Cleaning

Wipe down using only soap and water and a general use laboratory disinfectant. Rinse thoroughly with clean water and dry with a soft cloth.

Caution:

Avoid excessive use of water around the control area due to the risk of electrical shock. Damage to the controls may also result.