Manual

INCUBATORS
OVENS
HOT AIR STERILISERS
DRYING CABINETS
WATERBATHS

Contents

Unpacking

This manual may relate to either drying cabinets, incubators, ovens, waterbaths or the E3 range. Some instructions are specific to the model purchased and other instructions are general to all models. Remove all packing material from between the shelves and inner walls of the oven.

Mains supply

415-Volt Units
These units should be wired in by a suitably qualified electrician to the following:

BROWN	**'L1'**	**Phase 1**
BLACK	**'L2'**	**Phase 2**
GREY	**'L3'**	**Phase 3**
BLUE	**'N'**	**Neutral**
GREEN/YELLOW	**'E'**	**Earth pin**

PLEASE NOTE: Ensure that after the electrical connections have been made, the fan blades rotate in a clockwise direction as viewed from inside the chamber. It may be necessary to change phases to achieve this (Anti Clockwise External).

240-Volt Units
Each unit comes supplied with a mains connection lead already fitted with a correctly rated fuse. The fuse rating and other details for each unit is shown on the voltage plate riveted to the back of the unit. It is important that, if the fuse needs to be replaced, it must only be replaced with one of the correct rating.

110-Volt Units
Each unit is supplied with a cable but without a plug or fuse. These units should be wired in by a suitably qualified electrician to the following:

BROWN	**'L'**	**Live pin, refer to voltage plate**
BLUE	**'N'**	**Neutral pin for fuse requirement**
GREEN/YELLOW	**'E'**	**Earth pin**

⚠️ **WARNING: DO NOT CONNECT THE OVEN TO A D.C. MAINS SUPPLY OR SERIOUS DAMAGE WILL OCCUR**

Maintenance

Routine checks on each occasion of use:
- Check the condition of supply lead and plug top
- Connect to mains supply and check:
  - Supply switch operation
  - A temperature check can be done by using a suitable temperature probe inserted 100mm into the oven chamber via the top vent. If the chamber requires a temperature adjustment, see 'Calibration, page 10'.

Preventative maintenance

Ensure that the unit is maintained in a clean, dry condition and, when not in use, stored in a normal ambient atmosphere.

Minimum recommendation every six months:
- Check the plug top connections are tight and the fuse rating is correct.
- Check the operation of the overheat protection system by raising the desired temperature above the overheat temperature see 'Safety' section of this manual, page 10.
- Carry out an electrical safety check (Portable Appliance Test) using an appropriate appliance tester, operated by a competent person.
- Check that the control temperature is maintained within limits.
- The manufacturer can offer the above service on request.

Safety

- When the unit is to be used for the incubation of microbiological specimens, please consider carefully the siting and use of the unit to ensure safe operating conditions for all users.
- If liquids contained in partially sealed vessels are to be heated in the unit, then at all times the temperature setting must be such that no appreciable pressure build-up is allowed to occur within the vessel. The risk of explosion becomes high if the temperature setting is higher than that of the boiling point of the liquid. Therefore, any vessels that require heating **SHOULD NOT** be completely sealed.
- These units are not suitable for use where inflammable solvents are being used where the solvent concentration can reach inflammable or explosive levels.

If this manual is for a waterbath, never run the water bath without water in as it will cause the element to burn out under dry boil conditions.
- The water should never fall below the internal shelf
- Do not operate the water bath when the fluid level is above the ridged fill line, which is approximately 30mm from the top of the bath
- Do not use at temperatures above 60°C without a lid or some other means of reducing evaporation such as plastic spheres
- If running the bath on Lab Armour, the control system will automatically compensate

General

- Mop up any spilled liquid from the floor of the unit. Drip trays are available upon request from the supplier should you have excess liquid evaporation.
- Do not place samples on the chamber floor, **ALWAYS use the lowest shelf**.
- Take the normal precautions to prevent liquids coming into contact with the electrical components.
- The outer surfaces can be cleaned with a warm, damp, soapy cloth or any proprietary cleaner suitable for a painted surface (do not use solvents or harsh abrasives). The work chamber may also be cleaned as above.

WARNING: The following precautions MUST be observed:
- Do not place items with excess water into the cabinet, e.g. drain glassware before use.
- Do not place the cabinet flush to a wall. A small gap must be left to allow free circulation of air.

THIS UNIT IS NOT SUITABLE FOR USE WITH FLAMMABLE SOLVENTS

Enter Your Own Text Here

Real Time Clock

Temperature Set Point

Prime

Mon 18 June
16:25

Set Point
100°C

Operation Mode

Timer / Manual

Start/Stop Switch
and Oven Indication

300.0

Chamber
Temperature

Alm
Off

Chamber Status

Timer Finished

Reset Alarm Button

Press for
Chamber
Information

Press for on Screen
Trending or to
Export Data

Press to
Configure
the Chamber

Notes
Available functions and
features differ from unit
to unit. Please contact
your supplier if you see
a feature in this manual
which you want to
install.

To start / stop the chamber

S.D.O. Mon 18 June 16:25 Set Point 170°C

170°C

S.D.O. Mon 18 June 16:25 Set Point 170°C

170°C

Press the start button.

The chamber will now start to heat to the default Set Point shown in the top right hand corner of the screen.

To stop the chamber heating, press the red button and the icon will turn back to the start symbol shown here awaiting the next command.

Note, this command is not available in E3 modes, **see E3 running operation page 8.**

To change set point

S.D.O. Mon 18 June 16:25 Set Point 170°C

170°C

S.D.O. Mon 18 June 16:25 Set Point 170°C

169.0
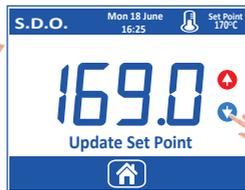
Update Set Point

The active Set Point (SP) is displayed next to the

Press the SP button.

The screen will change to Update Set Point screen.

Change the set point using the up and down keys.

Either press or leave the screen for 5 seconds and the SP will be updated and go back to the run screen.

S.D.O. Mon 18 June 16:25 Set Point 170°C

170°C

S.D.O. Mon 18 June 16:25 Set Point 170°C

Set Point Lock Active

Go to Configuration to Turn Off

Set Point Lock
You can lock operators from changing the set point without access to the configuration password if required.

To activate/deactivate set point lock, **go to Temperature Settings section, page 10.**

If Set Point Lock is activated, you will get the following message.

To view chamber information and monitor energy useage

B.T.I.	Mon 18 June 16:25	Set Point 70.0°C

70.0 °C

B.T.I.	Mon 18 June 16:25	Set Point 70.0°C

Model Code: INC50/TDIG
Serial Code: 20A145
Manufactured: 07/2020
Element Rating: 500
Amps: 2
Volts: 240
Safety Sensor: 45 C

kWh 000028 Reset

To view chamber information such as serial codes, power ratings, 2nd safety temperature value, press the ⓘ button, or, e^3 on E3 models.

Chamber specifications are shown on this page including the current safety sensor value.
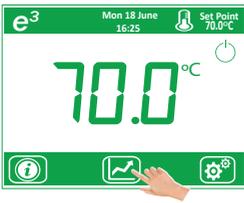
A kWh meter is highlighted on this page to indicate the power usage.

To reset this meter, touch the Reset key.

To download the operating manual in electronic format, scan the QR code on this screen with your smart phone.

To return to the run screen, press the home button.

To view / download historical information

e^3	Mon 18 June 16:25	Set Point 70.0°C

70.0 °C

e^3	Mon 18 June 16:25	Set Point 42.0°C

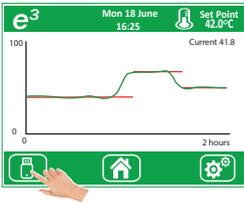100 — Current 41.8
0 — 0 — 2 hours

To view the history of the chamber, press 📈

The red trend is the set point the chamber is working to and the green trend is the actual temperature the chamber has been.

The scaling of the trend is automatically scaled to the maximum temperature.

The time period can be set in the history section in the configuration menu (page 13).

e^3	Mon 18 June 16:25	Set Point 42.0°C

100 — Current 41.8
0 — 0 — 2 hours

e^3	Mon 18 June 16:25	Set Point 42.0°C

Export Data to USB

Yes / No

On some advanced model ranges, datalogging of both temperature and energy usage can be exported and archived in graphical and numerical format. Please note this is not a standard feature, hence your chamber may not have this option.

To download the raw data, insert a memory stick into the USB panel socket and press the memory stick icon.

Press Yes when prompted to export the data.

e^3	Mon 18 June 16:25	Set Point 42.0°C

Insert USB Memory and retry

Yes / No

e^3	Mon 18 June 16:25	Set Point 42.0°C

Exporting Data ....

The control system will automatically upload any missing data from the last export command.

If no USB memory is available, or, if the memory is broken, it will ask you to insert a new one and press Yes.

e^3	Mon 18 June 16:25	Set Point 42.0°C

Data Transfer Successful

Remove USB

Once all transfer is done, remove the USB memory and press the 🏠 button to return to the run screen.

To display the data in graphical form, use the raw data saved in conjunction with the G-Viewer software package.

Operating chamber in timer mode

The chamber can be set up to work in 1 of 3 timer functions.

1. Process Countdown Timer

2. Profile Control:
- **2a** - Basic 8 Stage Profile Mode
- **2b** - Advanced Multi Menu Profile Mode
- **2c** - Cyclic Profile Mode

3. 24 Hour Real Time Clock Mode

Only one timer mode can be active at any time. These are selected in the Timer Settings on the configuration page. Timer functions are not available on all models. To upgrade to timer functions, please contact the supplier.

Standard profile mode offers a 8 stage profile. Advanced multi menu profile and cyclic control is available as optional extras, please contact the supplier to upgrade if required.
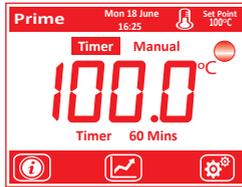
1. Process countdown timer
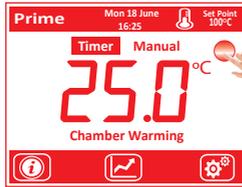
Select to run in either Timer mode or Manual mode.

Manual mode will keep the chamber at the selected Set Point until you press the stop button.

Press the start button.

The chamber will begin to warm to the desired set point. Within 2 deg of setpoint, the chamber will start the count down timer and the remaining time is displayed on screen. This time period can be changed between 1 and 5000 minutes in the Timer Configutation section shown on page 11.

If the temperature falls outside of the 2 deg band, (i.e. if chamber door is opened) the timer will pause until the set point is reached again.

At the end of the countdown, the timer will turn the heat off. Depending on preference, you may choose to turn on a siren/beacon at this stage (selected in Output Relay Section - Page 13).
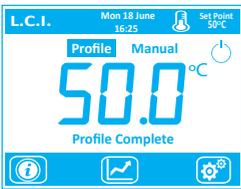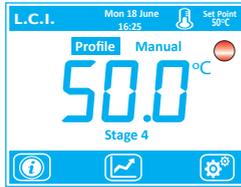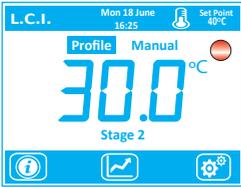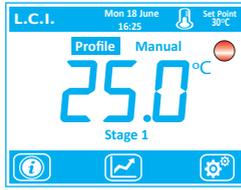
To cancel the siren / beacon, press the 'Alm Off' icon. The chamber will now return to sleep mode awaiting the next command.

Repeat the procedure if required, or select manual mode. to go back to normal running mode.

Operating chamber in profile mode

L.C.I. Mon 18 June 16:25 Set Point 30°C
Profile Manual
20.0 °C

L.C.I. Mon 18 June 16:25 Set Point 30°C
Profile Manual
25.0 °C
Stage 1

Select to run in either Profile Mode or Manual Mode.

If in Manual mode, the chamber will warm to the set point shown in the top right of the home screen.

If in Profile mode, the SP automatically changes to the stage 1 SP set in the configuration menu (page 12).

The chamber will start to heat until it reaches the target SP of stage 1 and then jump to stage 2.

L.C.I. Mon 18 June 16:25 Set Point 40°C
Profile Manual
30.0 °C
Stage 2

L.C.I. Mon 18 June 16:25 Set Point 40°C
Profile Manual
29.0 °C
Hold Back

At the start of stage 2, the SP shall change to the next requested SP and the chamber will begin to heat / cool as required.

If the Hold Back feature is set during this stage on the configuration and the chamber temperature falls outside the expected temperature range, the chamber goes into Hold Back mode. This will pause the time and ramp function until it comes back into the expected temperature range.
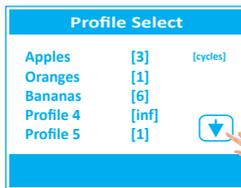
The Hold Back feature can be disabled if required, and used for example when either the door is unexpectedly opened or if the decrease in temperature is set too quick for the natural loss of heat from the chamber if a cooling stage is set. In this example, the chamber comes back into the expected temp range so stage 3 profile is then continued.

L.C.I. Mon 18 June 16:25 Set Point 40°C
Profile Manual
40.0 °C
Stage 3

L.C.I. Mon 18 June 16:25 Set Point 50°C
Profile Manual
50.0 °C
Stage 4

On reaching 40 deg, the final stage (stage 4) ramps the chamber to 50 deg.

L.C.I. Mon 18 June 16:25 Set Point 50°C
Profile Manual
50.0 °C
Profile Complete

L.C.I. Mon 18 June 16:25 Set Point 50°C
Profile Manual
50.0 °C
Cool Chamber First

At the end of stage 4, the chamber indicates profile complete and goes into standby mode (up to 8 stages can be configured if required)

If the chamber is above the starting temperature of the configured profile and the start button is pressed, the chamber will not turn on and display the message Cool Chamber First. To start the next profile, either wait until the chamber falls below the Stage 1 temperature setting, or press the Manual button and run the chamber to the default SP.

Operating chamber in multi-profile mode or as a cyclic chamber

L.C.I. Mon 18 June 16:25 Set Point 70°C
Profile Manual
20.0 °C

Profile Select
Apples [3]   [cycles]
Oranges [1]
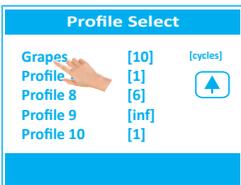Bananas [6]
Profile 4 [inf]
Profile 5 [1]

Advanced models will come with multi profile control with cyclic features. You can enter a maximum of 10 unique profiles with a unique name and number of cycles, please go to Page 13 to assist in this configuration.

Highlight the Profile Icon and press the Start button.

A Profile Select Screen will appear with a maximum of 10 saved profiles stored. Press the up and down key to toggle between pre saved profiles 1 to 5 and 6 to 10.

The number highlighted in the brackets is the amount of times the profile will repeat before it goes to standby mode. These can be changed in the configuration section also.

Profile Select
Grapes [10]   [cycles]
Profile 7 [1]
Profile 8 [6]
Profile 9 [inf]
Profile 10 [1]

Grapes Mon 18 June 16:25 Set Point 30°C
Profile Manual
25.0 °C
Stage 1 Warm Up

Select the pre saved profile, in this case Grapes is selected. The chamber will then automatically control to the presaved data from Grapes and will repeat this 10 times. To highlight which profile is running, the profile name is shown on the top left corner of the screen. To stop and profile at any stage, simply press the red stop button and the chamber will go into standby mode awaiting the next command. To upgrade from 1 x 8 profile mode to 10 x 8 with cyclic control, please consult your supplier. This firmware upgrade is available with license keys.

Operating chamber in real time clock mode

Select to run in either Real Time Clock mode or in Manual mode.

To work the chamber so it turns on and off at designated times of the day, select Time Set and press the start button.

The chamber will now only heat up at the predetermined times set in the configuration set up (shown on page 13) the chamber will turn on and off automatically.

Up to 2 turn on and 2 turn off settings per day can be set. If you press the start button and it is outside the preset times, the display will highight Energy Saving Mode.

When it reaches the first start time, it will start to increase temperature until it reaches the set point and indicate Run Mode.

To turn the chamber on during Energy Saving Mode, press the start button (should be in red state at this stage).

The chamber will then start before the pre configured start time but turn off at the next stop time.

The chamber will indicate this with the message 'Boost Start' mode until it passes the designated start time and then go into standard time set mode.

If you want to start the chamber during the sleep mode in a manner so it does not turn off, change to manual mode and then press the start button. The chamber will then remain on until the stop button is pressed.

Turning on/off lights / extraction units
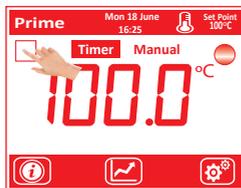
If the chamber is configured with internal lights or extraction systems, these can be manually turned on or off by pressing the or icon.

See Output Relay Action - Page 13.

Alternatively you can turn these on at various stages of profile operations as an event action if preferred.

Please note in E3 operation, this feature is not available.

Operating chamber in E3 mode

Please note this page on the manual is specific to the E3 range of Energy Saving Chambers.

The control system on the E3 Cabinet is designed to be energy efficient. The cabinets will only operate between preset hours of 7am and 7pm Monday to Friday, however, these times can be changed as shown on Page 13.

The operator can perform a boost start before 7am (or at weekends) or an extended run time after 7pm, however, the cabinet will then reset to default times to ensure energy saving performance.

The cabinet will always be in run mode between the hours of 7am and 7pm Monday to Friday. In run mode, it will automatically control to the Set Point.

If you don't want to warm the cabinet between these hours, turn off the unit with the on/off master rocker switch.

Outside of these hours, the cabinet will be in Energy Saving Mode as shown here and will turn the elements and fans off.

Boost start......
When in energy saving mode, press the +1hr command until the desired boost time is shown on the right of the icon. Press the start button and the cabinet will turn on for the pre set boost time.

The Boost time is displayed and the chamber will turn itself off again at 0 minutes.

If the preset start time occurs before it reaches 0 minutes, the chamber will stay on until the next preset Stop time and the message will change to Run mode.
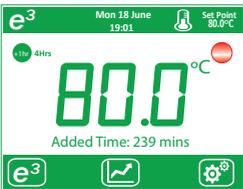
Extended time.....
4 hours before the preset turn off time (default 7pm), the +1hr button will appear. Every press will add 1 hr (max of 6) to the shut down time.

At 7pm, the message will change to an 'Added Time' value and turn the power off when the timer gets to zero to allow for extended drying times.

The cabinet will then turn back on as usual at 7am the next day and reset any boost and added times to zero.

Alarm diagnostics

|	
L.C.I. — Mon 18 June 16:25 — Set Point 70°C **Warning** Over Temperature Alarm Chamber Cooling Oven 71.7°C Safety 71.8°C	The control system is designed to indicate any faults should they occur. High Temp Alarm. If the chamber goes into a high temp alarm mode, it will remove power to the heating elements until it falls below the set point configured in (page 10 Safety Settings). The chamber temperature and the overheat sensor temperature is shown during this mode on the alarm screen.
L.C.I. — Mon 18 June 16:25 — Set Point 70°C **Warning** Over Temperature Alarm Reset Oven 67.2°C Safety 67.1°C	If the unit is set as Auto reset, when the temperature falls below the (Value - Hysteresis) it will automatically reset and continue operations. If the unit is set as Manual Reset, you must press the Reset button to restart the unit after the chamber has fallen in temperature to less then (Value - Hysteresis).
L.C.I. — Mon 18 June 16:25 — Set Point 70°C **Warning** Probe Failure Phone 'Help Line' Fault - Ctrl OC - Cut Out CC -	Sensor failure. If the probes are damaged, the control system shall automatically turn the heating elements off. Please contact your supplier for replacement probes. The message will indicate which probe has failed as each unit has 2 probes, the message shown here shows Control Probe (Probe B) has gone open circuit and Over Heat Probe (Probe A) has gone closed circuit.
L.C.I. — Mon 18 June 16:25 — Set Point 70°C **Warning** Calibration Due Phone 'Help Line' Cancel Warning No Reminders Cancel Warning Remind again	If you requested a calibration certificate with your chamber, the control system shall give you notification when the calibration is about to expire one month before. If you require a new calibration, please contact your supplier. By pressing the Cancel Warning, the control system shall not remind you again. To continue operation but request another reminder 1 week later, press the 'Cancel Reminder, Remind again' icon.
L.C.I. — Mon 18 June 16:25 — Set Point 70°C **Warning** Warranty Finished Phone 'Help Line' to extend Cancel Warning No Reminders Cancel Warning Remind again	If you purchased an extended warranty with your unit, the control system shall remind you when the warranty is about to expire. If you want to arrange a service visit, please contact the supplier. By pressing the Cancel Warning, the control system shall not remind you again. To continue operation but request another reminder 1 week later, press the 'Cancel Reminder, Remind again' icon.

L.C.I. Mon 18 June 16:25 Set Point 30°C
70.0 °C

Enter Config PIN

| 0 | 3 | 8 | 1 | ENT |

Temperature Settings

Temperature | Safety | Calibration
Home Screen | Timer | History
Outputs | Upgrades |

Temperature Settings

Decimal places :	xxx / xxx.x
Minimum Set Point:	20.0 C
Maximum Set Point:	100.0 C
Default Set Point:	80.0 C
Set Point Lock:	Y / N
Scale:	C / F

Press the configuration symbol. Enter Config PIN.

Depending on chamber specfication, some icons may not be displayed on your model. Features can be added by contacting your supplier if required. After configuring your chamber, press the home screen. The chamber will then ask if you want to save the configuration. If you have made an error, press cancel and the chamber will go back to the previous configuration.
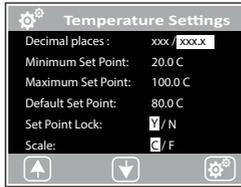
Decimal places
Choose the screen resolution of chamber temperature.

Min Set Point
Set the lowest set point available for the chamber.

Max Set Point
Set the highest set point available for the chamber.
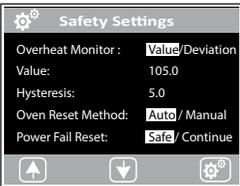
Default Set Point
Set the set point you want the oven to go to after power failure or reconfiguration. Operators can change from this default set point between the Min and Max set point from the run screen without any passwords.

Set Point Lock
To stop the operators from changing the set point, select 'Y'.

Scale
Set chamber to work as either Celsius or Fahrenheit.

Safety Settings

Overheat Monitor :	Value/Deviation
Value:	105.0
Hysteresis:	5.0
Oven Reset Method:	Auto / Manual
Power Fail Reset:	Safe / Continue

Overheat Monitor
When selected as a Value, enter the Max Temperature alarm value which sends the chamber into an alarm condition. The hysteresis value is the temperature the chamber comes out of alarm condition. Example: Overheat Value 100, hysteresis 5 - The chamber will go into alarm condition at 100 and come out of alarm condition at 95 (100-5).

Overheat Monitor
When selected as a Deviation, enter the deviation band around the set point. This function is useful when the chamber is in profile mode to help protect the process. Example, Deviation = 5 - The chamber will go into alarm mode if the temperature is outside the deviation band. With a set point of 100, the chamber will go into alarm condition if goes above 105.
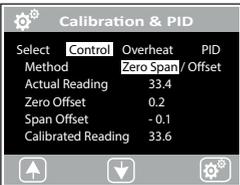
Oven Reset Method
In Auto mode, the chamber will reset itself and continue operation as soon as it comes out of alarm mode.

In Manual mode, the chamber will require the operator to press the reset button on the run screen to restart. The chamber will only restart if it is out of alarm condition. This is the safest configuration as it will need a user intervention to restart the chamber.

Power Failure
In Safe mode, should power be lost, upon power being turned back on, the chamber will turn back on and await the operator to press the start button.

In Continue mode, the chamber will turn itself back on and control to the 'Default Set Point' temperature upon power being turned on. (See Temperature Settings above).
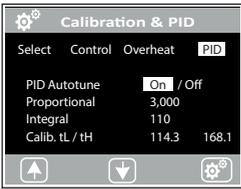
Calibration & PID

Select	Control	Overheat	PID
Method	Zero Span / Offset		
Actual Reading	33.4		
Zero Offset	0.2		
Span Offset	- 0.1		
Calibrated Reading	33.6		

Calibration
The chamber has 2 isolated temperature probes, a control probe which the controller uses to detect temperature changes in the chamber, and an overheat probe, which works independently as a safety monitoring solution. This turns the heaters off under an alarm condition that may occur under fault mode. Both Control and Overheat probes can be calibrated either with a zero/span calibration or an offset calibration.

In zero/span Calibation mode, set the chamber to work at the lowest temperature and note the temperature against a calibrated reference probe situated within the chamber. If the readings do not match, apply a zero offset.

Example, the chamber display states 33.4, the reference probe states 33.6, enter +0.2 in this field. After the zero offset is applied, run the chamber up to the maximum temperature and repeat the process for span offset. The chamber will then compensate a linear offset against the minimum and maximum values.

In Offset calibration mode, run the chamber to the temperature it is commonly used at. From the reading from an external calibrated probe, compare this reading to the chamber reading. Example, the chamber display states 33.4, the reference probe states 33.6, enter 0.2 in this field. After the Offset is applied, the chamber will compensate for this over the entire range.

Calibration & PID screen

Select   Control   Overheat   **PID**

PID Autotune   On / Off
Proportional   3,000
Integral   110
Calib. tL / tH   114.3   168.1

S.D.O. — Auto-Tune Ready

Mon 18 June
16:25

Auto-Tune Ready

	State:	0
	Power:	20%
Kp: 3.0000	Duration:	--:--:--
Ki: 110.1	Temp:	25.7
tH: 168.1	Temp Limit:	0.0
tL: 114.3	Dead Temp:	0 secs

Customise Home

Select   Text   Time   Display
Run Screen Text

Enter Text

Customise Home

Select   Text   Time   Display
Set Clock   20 : 16

Set Date   20 : 06 : 18
Mon Tue Wed Thur Fri Sat Sun

Enter Text run screen

Enter Text   Mon 18 June 16:25   Set Point 170°C

170.0 °C

Customise Home

Select   Text   Time   Display
Text Colour
Background Colour   Text
Screen Brightness   80%
Element Status   On / Off
Language   ENG / GE / SP / FR / PO

Configuration icons

Temperature   Safety   Calibration
Home Screen   Timer   History
Outputs   Upgrades

Timer Settings

Function Timer   Profile   24/7RTC
Enable Timer   Yes / No
Activate Event Relay Yes / No
Process Timer
Enter Minutes   5000

In **PID** mode, you can manually enter the P, I, and tL and tH value to optimise the control. For fan units, the P is defaulted to 3.000 and for fanless units the P value is defaulted to 1.500. The Integral and tL and tH values are best calculated using the Autotune. Please note the algorithm used in the control system uses Fuzzy Logic. This means these values are constantly updated to provide optimum control.

When selected as Auto, when you return to run screen, the chamber will then automatically calculate the best P, I and tL and tH values for optimum chamber conditions.

Only Auto Tune the chamber if it is not controlling well, if you have an unusual load, or if you replace the control system.

The Auto Tune feature may take up to 8 hours depending on the model. During this time, the chamber will gradually increase the temperature and teach itself the thermal errors hence do not run a heating sequence until it has completed. At the end of an autotune, the chamber will go into sleep mode awaiting the next command.

If power is lost during Auto Tune, it will retain the previous values hence you may need to repeat the process.
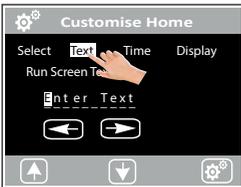
Customise Home
You can customise the run screen to best suit the environment with a variety of text colours, background colours and identity tags.

In the Text configuration, you can enter upto 10 characters such as company name, oven name, location, ID no. This text is then displayed on the top left hand side of the run screen.

Enter the Time and Date.

This may be required to update if clock battery runs low.

The run screen can be colour selected to suit the environment. The chamber will have default colours set depending on the model, but you can change colours to your preference. Both run screen text and background colours can be changed and as you change the colours, these are represented in the top bar. Available colours are navy blue, green, grey, black, red, light blue and white.

Screen Brightness
Select between 5% to 100% screen brightness.

Element Status
The start icon changes to a red 'ON' symbol during operation. The icon can either be solid red when set to 'OFF' or flash at the same frequency power if applied to the heating elements if set to 'ON'.

Language
The screen can be set to various languages. As default it is set to English, however this can be changed by pressing the languages ENG: English, GE : German, SP : Spanish, FR : French, PO : Portuguese.
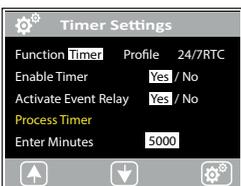
Timer Settings

If your unit does not have the timer symbol shown on the configuration screen, the license if not activated. To purchase a Timer License Code, phone your supplier.

If your unit has the timer function license, you can turn the timer modes on and off with the Enable Timer Icon. This turns on all 3 different timer functions. When activated, the run screen will have the timer selected (see page 3) .
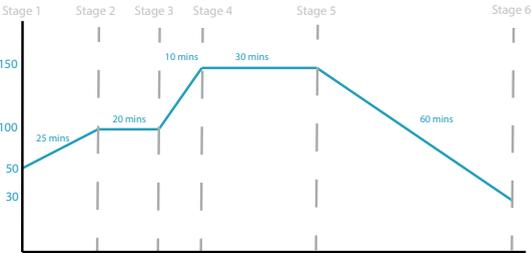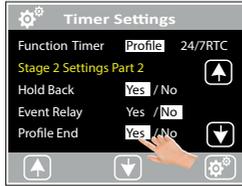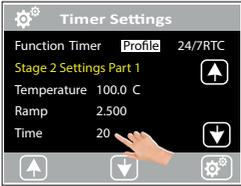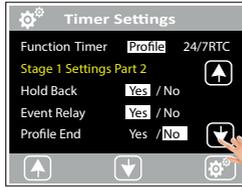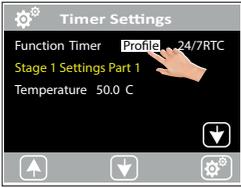
Only 1 timer function can be active at one time. Select which mode you prefer from either Count Down Timer, Profile Mode or Real Time Clock. To change modes, go into the settings and highlight your preference. This will change the runs screen as shown on page 3.

Count Down Timer Mode
Enter the time period in minutes you want each cycle to be (max 5000 minutes)

Event relay: Select if you want to trigger a siren or beacon (if fitted) at the end of the timer cycle.

Programming 1 x 8 stage profile

Timer Settings
Function Timer Profile 24/7RTC
Stage 1 Settings Part 1
Temperature 50.0 C

Timer Settings
Function Timer Profile 24/7RTC
Stage 1 Settings Part 2
Hold Back Yes / No
Event Relay Yes / No
Profile End Yes / No

Timer Settings
Function Timer Profile 24/7RTC
Stage 2 Settings Part 1
Temperature 100.0 C
Ramp 2.500
Time 20

Timer Settings
Function Timer Profile 24/7RTC
Stage 2 Settings Part 2
Hold Back Yes / No
Event Relay Yes / No
Profile End Yes / No

Profile Mode. Max 8 Stages.

The chamber can run up to 8 stages of profile control. Stage 1 is the set point to climatise the chamber to the starting temperature.

At each stage, please select if you require hold back, or, if the event relay is activated for control of sirens or beacons. If hold back is selected and the chamber falls outside the expected temperature, the profile is put on hold until it returns back to the expected condition (ie if the chamber door opens). If this is not selected, the time period continues as configured depending on the chamber conditions.
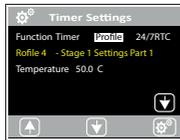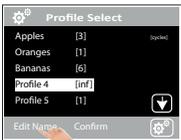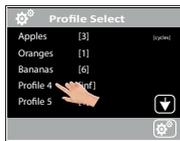
To configure the next stage, select Profile End to No. If selected to Yes, it stops further stages being entered. Select the next temperature value desired for the next stage.

Highlight Time and enter the time period you require to ramp to this temperature. The Ramp rate is automtically calculated as the Time Value is changed. If you want to Dwell for a set period of time, enter the same Temperature Value as the previous stage.

Example of the configuration to perform the graph on the left.

On start, the chamber shall rise to 50 deg C. If you press the start button and the chamber is above 50 deg C, it will show message 'Cool Chamber First'
Stage 2 will then rise to 100 deg C within 25 minutes. (Ramp)
Stage 3 will stay at 100 deg C for 20 minutes. (Dwell)
Stage 4 will then rise to 150 deg C within 10 minutes. (Ramp)
Stage 5 will stay at 150 deg C for 30 minutes. (Dwell)
Stage 6 will then cool to 30 deg C within 60 minutes at a rate of -2 deg / minute - the siren/beacon activated at the end of Stage 6 (Fall)
Chamber now goes into stand by mode.

S1	Temp	50				
S1	Hold Back		N	Event	N	End	N
S2	Temp	100				
S2	Ramp	2.000				
S2	Time	25				
S2	Hold Back		N	Event	N	End	N
S3	Temp	100				
S3	Ramp	0.000				
S3	Time	20				
S3	Hold Back		Y	Event	N	End	N
S4	Temp	150				
S4	Ramp	5.000				
S4	Time	10				
S4	Hold Back		Y	Event	N	End	N
S5	Temp	150				
S5	Ramp	0.000				
S5	Time	30				
S5	Hold Back		Y	Event	Y	End	N
S6	Temp	30				
S6	Ramp	-2.000				
S6	Time	60				
S6	Hold Back		Y	Event	Y	End	Y
S7	END					
S8	END					

Programming 10 x 8 stage profile

Timer Settings
Function Timer Profile 24/7RTC
Stage 1 Settings Part 1
Temperature 50.0 C

Profile Select
Apples [3] [cycles]
Oranges [1]
Bananas [6]
Profile 4 [inf]
Profile 5

Profile Select
Apples [3] [cycles]
Oranges [1]
Bananas [6]
Profile 4 [inf]
Profile 5 [1]
Edit Name Confirm

Profile Select
Profile 4 Name
R r o f i l e 4

Profile Select
Apples [3] [cycles]
Oranges [1]
Bananas [6]
Profile 4 [7]
Profile 5 [1]
Edit Name Confirm

Timer Settings
Function Timer Profile 24/7RTC
Rofile 4 - Stage 1 Settings Part 1
Temperature 50.0 C

Note that '10 Menu and Cyclic Profile Control' is not a standard feature. To upgrade to this feature, please contact your supplier and ask for upgrade /10PRO.

Each Profile is set up in the same manner as shown above. To edit each menu and store another profile (up to 10) please follow these steps.

Press Profile and then Profile again to open Profile Select page.

Highlight 1 of 5 profiles or press down to show 6 to 10 profile.

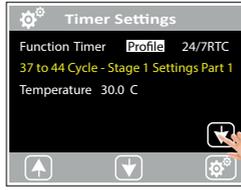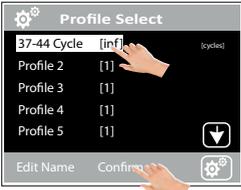Press Edit name and change name using arrows.

Press Config icon to save name.

To change repeat cycles, press the profile name and watch the number in the box rise which equated to how many cycles occur. You can select 1 to 10 repeats of 'inf' for continuous repeat mode (cyclic control).

Press Confirm to change profile settings againt this new name.

Configure this profile as required.

Profile Select

Profile Select
37-44 Cycle   [inf]   [cycles]
Profile 2   [1]
Profile 3   [1]
Profile 4   [1]
Profile 5   [1]
Edit Name   Confirm

Timer Settings

Function Timer   Profile   24/7RTC
37 to 44 Cycle - Stage 1 Settings Part 1
Temperature   30.0 C

Edit the name of 1 of the available 10 profiles.

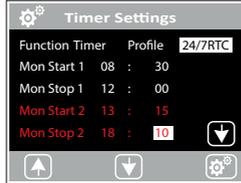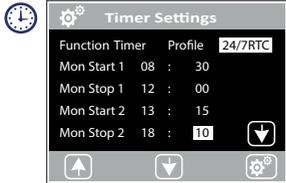Press the number in the [?] repeatedly until it gets to [inf].

Press confirm to Edit this profile.

As an example, if you want to cycle the chamber between 37 deg C for 1 hour and 44 deg C for 2 hours.

Note if you want to run the unit as a cyclic chamber, the final set temperature of the last stage, must be the same or lower then the 2nd stage temperature set point.
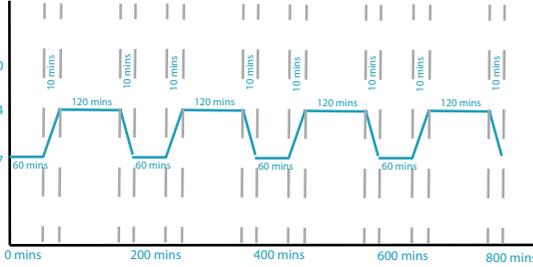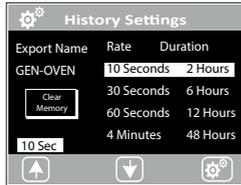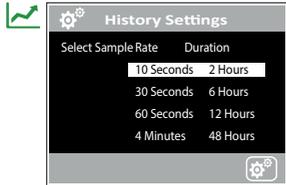

S1	Temp	37 (climatise the chamber initially to the first Temp Set point)				
S1	Hold Back	N Event N End N
S2	Temp	37
S2	Ramp	0.000
S2	Time	60mins
S2	Hold Back	N Event N End N
S3	Temp	44
S3	Ramp	0.700
S3	Time	10mins
S3	Hold Back	N Event N End N
S4	Temp	44
S4	Ramp	0.000
S4	Time	120mins
S4	Hold Back	N Event N End N
S5	Temp	37
S5	Ramp	-0.700
S5	Time	10mins
S5	Hold Back	N Event N End Y

Timer Settings

Function Timer   Profile   24/7RTC
Mon Start 1   08 :   30
Mon Stop 1   12 :   00
Mon Start 2   13 :   15
Mon Stop 2   18 :   10

Timer Settings

Function Timer   Profile   24/7RTC
Mon Start 1   08 :   30
Mon Stop 1   12 :   00
Mon Start 2   13 :   15
Mon Stop 2   18 :   10

Time Mode
The chamber can be configured to turn itself on and off twice per day. Enter the start and shut down times as requested.

If an invalid start and stop time is entered, it will highlight in red and will not allow you to continue until a valid time is entered. If you only require it to turn on and off once per day, leave the Start 2 and Stop 2 to 00:00.

History Settings

Select Sample Rate   Duration
10 Seconds   2 Hours
30 Seconds   6 Hours
60 Seconds   12 Hours
4 Minutes   48 Hours

History Settings

Export Name   Rate   Duration
GEN-OVEN   10 Seconds   2 Hours
Clear Memory   30 Seconds   6 Hours
               60 Seconds   12 Hours
               4 Minutes   48 Hours
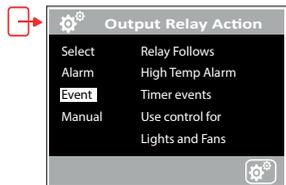10 Sec

History Settings
The trend page can be set to run as a 2, 6, 12 or 48 hour window. The longer the time on the viewing window, the less sampling rate. If you have a quick responding application we would recommend you set this for a 2 hour duration.

On upgraded models with Data Export feature you can select the recording sample rate and data file on this screen. To change the file name highlight the name by touching it. You can then manually change this using the cursor keys.

If you have multiple devices on 1 site and want to export various information from multiple device, it is recommended to have a different file name on each device. This folder name is shown on the presentation data so enter a name that you recognise. Some users enter product batch numbers in this field for traceability.

To clear the internal memory press the Clear Memory Button and it will disappear and delete all previous data files. This feature is useful if you are doing batch recording. Ensure you have exported and saved any required data prior to pressing the clear button.

To change the sample rate of logging, highlight the range and use the up and down keys to set between 10 secs to 300 secs. When set at 10 sec sample rate, the unit will store up to 48 hours of data. When set at 300 sec sample rate, this will increase to 60 days of data.

Output Relay Action

Select   Relay Follows
Alarm   High Temp Alarm
Event   Timer events
Manual   Use control for
          Lights and Fans

Output Relay Action
The chamber may be built with an addtional siren / beacon or with an oven light that you can control via the touch screen. Only 1 action can be active at one time.

In Alarm mode, the siren will come on with a high temp alarm.

In Event mode, this is linked to the count down timer or on the profile control mode. If you set Event active, the siren or beacon will come on at that sequence. This is used to highlight the end of a process timer with a visual indication and/or siren with the option AWA. Alternatively, in profile mode, this could be used in conjunction with a door lock, to keep the door locked at various times of the cycle.

In manual mode, the chamber light, or extractor will be turned on and off via the run screen button.

The upgrade key is password protected and used at manufacturing stage, or, to upgrade features such as Timers.

Please do not change any settings in this menu as it may cause damage to the chamber. The changes will be saved to the internal memory and this will void your warranty.

Contact your supplier if you need to perform any firmware upgrades. Your serial number will be required to generate the license key.
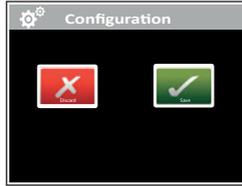
To Exit the configuration menu, press 🏠

The chamber will then ask if you want to save any amendments as the current configuration.

If you have made errors on the configurations, press 'Discard' the chamber will go back to the previous configuration.

The touch screen can be configured to power up with your own logo and company details.

This can only be done via the manufacturer so please contact your supplier for further details.

The chamber comes with a standard 2 year warranty. Contact your supplier if you want to extend the warranty within the first months of use.

To be completed by customer.

Model Code:

Serial Code:

Date Received:

Current Rating:

Voltage:

Dealer Stamp