



INSTRUCTION MANUAL

**CAT 2050 – 2400
STANDARD OVENS**

**CONTHERM SCIENTIFIC LIMITED
P O BOX 30-605 LOWER HUTT 5040**

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WARRANTY STATEMENT

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CONTHERM Scientific Company will guarantee CONTHERM equipment for a period of twelve months from the date of installation against faulty workmanship and fabricated materials. This guarantee covers the replacement of component parts found to be defective and authorised labour charges during this period.

Should a malfunction occur or condition develop beyond reasonable acceptance the company will accept responsibility for returning the unit to its factory specification at no cost to the Purchaser providing that the operating instructions have been observed and the defect is due solely to faulty design, material and workmanship. That the defective part be returned, freight paid to the nearest sales service office. Units outside the warranty period will be accepted and repairs will be covered under an extension of the above for 90 days.

In remote installations where it is not possible for the company's or agents' engineers to attend, authority may be given to allow the Purchaser to arrange such service.

The Purchaser is required to remit the purchase price of the unit to the supplier within the terms of that supplier's condition of sale. CONTHERM Scientific Company will accept no liability or shall its agents for consequent damage of any kind due to a malfunction or component failure.

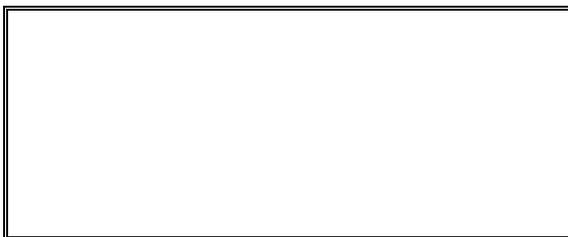
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STATEMENT of CONFORMITY

This **CONTHERM** cabinet conforms to the following standards:

- **Electrical Safety:** Complies with AS/NZS3350:1:1994
- **EMC:** Complies with EN 61326-1:1997



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IMPORTANT

All electrical servicing **must** be carried out by suitably qualified personnel only.

SECTION 1 DEFINITION OF TERMS

For the purpose of our standard specifications the following definitions shall apply:

- a) **WORKING SPACE**
That portion of the internal space which is above the lowest shelf and not less than 3cm from any wall (including roof).
- b) **CABINET TEMPERATURE**
That temperature at the centre of the working space.
- c) **SPATIAL VARIATION**
The difference between the midrange of all measured temperatures obtained at one site and that at another site for those sites which give the greatest difference.
- d) **TEMPORAL VARIATION**
The maximum value of the temperature range obtained for the standard site with the greatest range throughout the test interval.
- e) **TEMPERATURE OVERSHOOT**
Any excess of actual over desired cabinet temperature during a heating up period.
- f) **TEMPERATURE REPRODUCIBILITY**
Temperature regained without alteration to controls.
- g) **TEST INTERVAL**
Interval of time to which the steady state characteristics apply (Max 1 hour).

NB: All the above apply with an empty chamber.
For definitions and test methods refer: **AS2853 : 1986** (and Appendices)

SECTION 2 INTRODUCTION AND SPECIFICATIONS

The CONTHERM 2000 series range of ovens has been expressly designed to give the widest choice of operating conditions consistent with high reliability and low cost, the addition of a hi-resolution RTD control system gives improved temperature performance over earlier models.

All specifications are quoted for a cabinet temperature of 105°C with an ambient temperature of 20°C.

- **Construction** - High quality stainless steel interior, full fibreglass insulation, with latching door catch and corrosive resistant epoxy powder coated exterior.
- **Safety** - Fitted with an independent user adjustable Hi-Limit completely separate from normal controls.
- **Convection** - All units come with mechanical convection fan systems.
- **Electrical** - All quoted at 105°C - ZP21 Micro-Controller mechanical Convection.
 - Designed to AS/NZS 3350.1.1994 220-250V AC M.E.N
- **EMC** - Complies with EN 61326-1:1997

PERFORMANCE:

a) Temperature:

Nominal Range	Amb +5°C	- 260.0°C
Intermittent operation		- 300.0°C
Temporal Variation		± 0.3°C
Spatial Variation		± 2.5°C
Initial Overshoot		+2.0°C
Reproducibility		±0.5°C
Dial resolution		0.1°C
Operating Ambient		10°C - 35°C
Mains Voltage Range		230-250 VAC 50Hz

b) Ramp:

Adjustable ramp rate (within heating limitations) 0.0 - 9.9°C/min

NB: 0.0 and 9.9°C/min = no ramping, oven will use normal power operation.

c) Timer:

Timing range 1 minute - 99 hours 59 minutes

Timing Resolution 1 minute

NB: Timer does not start timing down **UNTIL** within 2.5°C of the temperature **SET POINT**.

SECTION 3 OPERATING INSTRUCTIONS

This appliance is NOT intended for use by young children or infirm persons without supervision.

To set up unit for operation after unpacking and checking for damage proceed as follows:

- 1) Install shelf runners: Fit lug into selected slot at rear of cabinet sidewall and clip down into front slot to lock into place. Check heights of runners are parallel.
- 2) Fit Shelves. Maximum shelf loading is 30Kg/shelf, maximum total for cabinet is 100Kg.
- 3) Select a location handy to a 10amp electrical outlet.
- 4) Bench Units - Place on solid top with clearance underneath to allow ventilation around entire cabinet. Any shelf or ceiling must be AT LEAST 200mm from the top of the oven.
- 5) Ensure a space of at least 150mm is allowed at the rear of the cabinet for air circulation.

NB: Ensure **ALL** of the distinctly coloured cable ties (If fitted inside cabinet) are **REMOVED BEFORE** operating the oven.

OPERATING CONTROLLER:

- 1) Plug cabinet into 220-250V Mains outlet.
- 2) Turn on main switch - The LED should show all 8888s then display the current temperature in the cabinet. Do NOT press any buttons until after the 8888's have gone from the display.
- 3) Press and HOLD the temperature button (top) UNTIL the 'SET' LED comes ON then RELEASE. The 'SET' LED above the LED display should now be ON!
- 4) While the 'SET' LED is On use the 'UP' & 'DOWN' buttons to adjust the SET POINT to the desired temperature.
- 5) WAIT for the display to return to normal; the 'SET' LED will then go off.

- 6) The **TIMER** must now be set to run the cabinet - use the **SAME** method as for the temperature **EXCEPT** press the 'TIME' button instead. To obtain the special '[.]' symbol for continuous operation, first adjust the timer down until '0.00' is reached, then press the down button once more to get '99:59' then the 'up' button to go 1 step above '99:59' the special '[.]' symbol should now be shown.
NB: the symbol '[.]' means run **CONTINUOUSLY**.
Setting the **TIMER** to **0.00** turns the cabinet **OFF**.
If the cabinet has **TURNED OFF** after the completion of a **TIMED** operating period it is only necessary to **PRESS** and **HOLD** the **TIMER** button until the 'SET' led comes on to **REPEAT** the **TIMED** run.
- 7) The cabinet will now attempt to obtain the **SET POINT** and control until the **TIMER** runs out of time. The cabinet **WILL NOT OPERATE** if the **TIMER** has been set to **0.00**.
- 8) To look at the current **TIME** press the 'TIME' button for 2 seconds - the amount of time left will now be displayed continuously.
To display the **TEMPERATURE** continuously - press the 'TEMP' button for 2 seconds.
- 9) To **CANCEL** any Alarm (ie. 1- - -) **PRESS** and **HOLD** the 'TEMP' button until the 'SET' LED comes ON.

Ensure the mechanical user **HI-LIMIT** is set correctly as described in the following section. The cabinet usually leaves the factory with the user **HI-LIMIT** set fully anticlockwise, if left in this position the **HI-LIMIT** will not allow the cabinet to heat and control correctly.

SAFETY HAZARDS:

There are several safety hazards that should be taken into account when operating this appliance due to the fact that it may be operated at high temperatures.

- **ALWAYS** ensure there is sufficient clearance above the oven **VENT** as high temperature air may be discharged at this location.
- The **VENT** may present a **BURN** hazard as it may attain relatively high temperatures, do **NOT** touch the vent tube until it has cooled down after oven operation.
- When opening the oven door **HOT AIR** may be discharged.
- Do **NOT** place anything directly on top of the oven especially above the oven vent as a **FIRE** hazard may exist if the material is combustible.
- The cabinet must be **UNPLUGGED** from the electrical supply **BEFORE** carrying out any routine maintenance.

RAMP:

Unless a specific ramp rate (how fast the temperature rises when going up from one temperature to another) is required it is recommended that the Ramp setting be 0.0°C/min. This will allow the controller to find the best rate automatically.

NB: The ramp rate is generally only useful for **SLOWING** the rate of temperature rise, rates above the cabinet's ability to heat will not be achievable.

MECHANICAL HI-LIMIT MONITOR

The mechanical hi-limit is provided as a secondary safety device to protect the cabinet from over temperature in the event of electronic controller failure.

To set the Mechanical Hi-Limit

Turn the Hi-Limit control **FULLY CLOCKWISE**.

Allow the cabinet to stabilise at the required operating temperature (for at least 1 hour), then turn the Hi-Limit control anti-clockwise until the **MONITOR** neon comes on (or a slight 'click' is felt). Now turn the Hi-Limit control **SLOWLY CLOCKWISE** until the **MONITOR** neon goes off (or a slight 'click' is felt), then advance the Hi-limit clockwise 1-2 scale markings. This will set the Hi-Limit trip point about 3 - 4°C above the current cabinet temperature.

NB: If the power to the cabinet is **REMOVED** for **LONG** periods when the internal cabinet temperature is above 190°C the operating life of the fan motor will be greatly reduced. It is **ALWAYS** recommended that the cabinet be allowed to cool to ambient temperatures **BEFORE** being switched **OFF** or **UNPLUGGED**, this allows the fan motor to continue operating while the cabinet is cooling down and thus prolongs fan motor life.

When using the oven for DRYING

ENSURE that the oven **VENT** is **OPEN** when using the oven to dry product, as this allows moisture to escape via the vent.

If the oven is operated with wet samples inside and the vent **CLOSED**, moisture will tend to try and escape through any small holes in the oven interior which could result in water condensing in the control area causing damage and/or corrosion.

After using the oven for drying, it is highly recommended it be run for a period of a few hours without product to allow the interior to dry out if not using it again for some time.

WARNING: To prevent FIRE or SHOCK hazard, DO NOT expose this product to rain or any type of moisture.

FOR YOUR SAFETY

To ensure safe operation the three-pin plug supplied must be inserted **ONLY** into a standard three-pin power outlet that is effectively earthed through the normal building wiring.

Extension cords are **NOT** recommended.

The fact that the equipment operates satisfactorily does **NOT** imply that the power outlet is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power outlet, consult a qualified electrician.

This appliance should be periodically tested according to the procedures prescribed in **AS/NZS 3760**.

The basic safety checks and tests on electrical appliances required by **AS/NZS 3760** are:

1. A visual check to ensure that there is no mechanical damage to the supply cord, that controls etc. are in good working order and that no parts are missing.
2. An earth continuity test.
3. An insulation resistance test.

In order to provide evidence of compliance, a label (signed and dated by the person testing the equipment) may be placed on the tested appliance.

PERIODIC ELECTRICAL SAFETY CHECKS

This appliance should be regularly tested (at intervals not exceeding 12 months) according to the procedures prescribed in **AS/NZS 3760**. The basic safety checks and tests on electrical appliances required by **AS/NZS 3760** are:

- a) A visual check to ensure that there is no mechanical damage, that controls etc. are in good working order and that no parts are missing.
- b) An earth continuity test.
- c) An insulation resistance test.

ALARMS

All alarms are indicated by a number and three dashes on the LED display and are accompanied by an audible alarm.

To **CANCEL** any Alarm (ie 1---) PRESS and HOLD the `TEMP' button until the 'SET' LED comes ON.

ALARM MEANING

- 1--- This means the cabinet is OVER or UNDER temperature. If UNDER temperature it could be due to the door being opened, otherwise check the cabinet to determine if the Internal fan is still operating and that the MECHANICAL Hi-Limit control is not interfering with normal operation.
- 3--- Preset alarm - The cabinet has lost its control settings due to an internal memory failure. Reset all control settings as desired and check the calibration setting.
- 4--- This means that the TEMPERATURE sensing probe has failed / over-ranged. (Type 1000 Ω RTD). Check cabinet is correctly configured as an oven by dialing up a set point BELOW 100°C and then attempt to adjust the set point ABOVE 100°C. If the display rolls over at 100°C carry out the following procedure. Confirm controller set type by turning cabinet off at main switch. Wait 10 seconds. Turn back on while holding down BOTH the 'TEMP' & 'TIME' buttons together and when the 8888's appear on the LED display immediately release the buttons and quickly press and hold the '**RAMP**' button - an answering 'BEEP' 'BEEP' should be heard, if the problem persists the connections to the sensing probe and the probe condition should be investigated.
- 9--- This is a WATCHDOG alarm - The Electronic PCB has failed - Replace the controller.

CALIBRATION

Calibration should be carried out at 150.0°C or at the temperature of interest, with the thermometer in the centre of the working chamber with the chamber empty. The calibration temperature must be within the achievable operating range of the oven.

- 1) Place the Calibration Thermometer probe in the workspace centre, close the door and set the controller for 150.0°C or the temperature of interest, allow at least 1 hour to stabilise.
- 2) Read the temperature on the Calibration Thermometer.
- 3) To calibrate the cabinet -
 - a) Press and HOLD the `TEMP' button until the 'SET' LED comes ON then release. The 'SET' led should now be ON.
 - b) WHILE the 'SET' led is ON: Press BOTH `UP' & `DOWN' buttons **TOGETHER** - a beep will be heard and the word `CAL' will appear briefly on the LED display. Adjust the reading on the LED display using the `UP' & `DOWN' buttons until it agrees with the Calibration Thermometer.
NB: If when attempting to press BOTH buttons together, the temperature SET POINT adjusts either up or down - it means you are NOT pressing BOTH buttons at the SAME TIME! - if the 'SET' led is still on you should attempt 3(b) again, if the 'SET' led is OFF you should repeat from 3 (a).
 - c) WAIT for a further beep to occur, the LED display will briefly show '----' before displaying the **CALIBRATION CONSTANT**, this will be a number in the range 0.0 to 19.9. This figure SHOULD BE NOTED as it may be used to return to this calibration setting. The LED display will then briefly show another '---' and the controller will resume its role of normal operation.
- 4) Allow to stabilise again - the temperature should now be correct. If NOT repeat the procedure.

NB: The calibration can only be performed within limits, if the calibration cannot be achieved a further fault exists.

VERIFYING CABINET PERFORMANCE

There are two basic tests that may be carried out to verify cabinet performance.

NB: These tests MUST be carried out with the cabinet EMPTY and at the specified ambient of +20°C.

TEMPORAL PERFORMANCE:

The cabinet should be set to operate at the Contherm specified calibration conditions.

Temporal performance is tested by placing a suitable (calibrated) test probe in the centre of the workspace and recording the readings for up to 1 hour AFTER the cabinet has FULLY STABILISED.

The cabinet has fully stabilised when the average temperature is no longer increasing or decreasing over time.

The result should be within the quoted specification.

This result is a function of the cabinet control system, sensor and airflow.

SPATIAL PERFORMANCE:

The cabinet should be set to operate at the Contherm specified calibration conditions.

Check Spatial Variation @ 105°C

(Refer manual for specification, 8 points as per diagram)

[6R]	[4C]	[3R]	TOP
[8C]	[1C]	[]	CEN
[2F]	[7C]	[6F]	BOT

(Where F=Front, C=Center, R=rear)

Spatial performance is tested by placing suitable (calibrated) test probes (usually thermocouples) in the eight specified positions and recording the readings for up to 1 hour AFTER the cabinet has FULLY STABILISED.

The cabinet has fully stabilised when the average temperature is no longer increasing or decreasing over time.

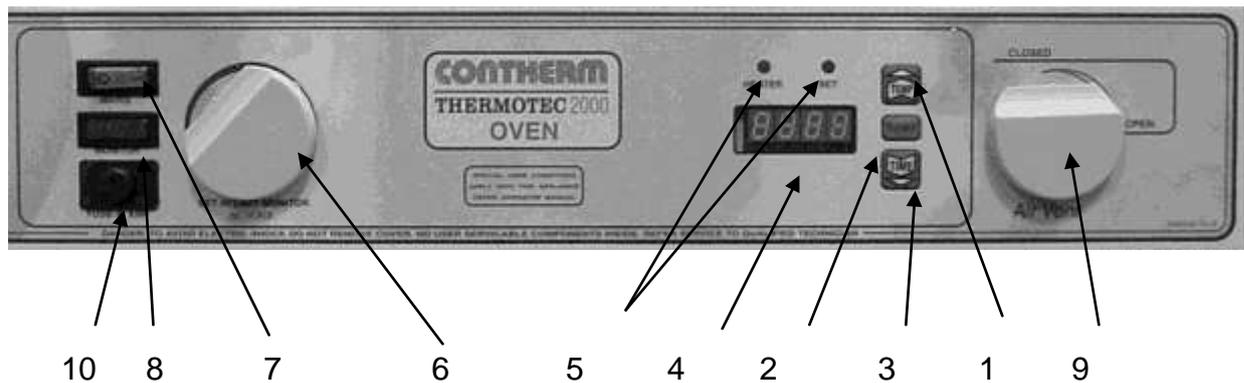
The sensors must be no closer than 30mm to any wall or roof and must be above the lowest shelf position by at least 30mm.

The result should be within the quoted specification.

This result is a function of the cabinet design and air distribution.

The spatial test must be performed with all doors, vents etc CLOSED and the measuring sensors must be very closely matched at the specified temperature.

CONTROL LAYOUT



The following controls are fitted on the Micro-controller Console:

- 1 Temperature adjustment button.
(Also used to adjust set points)
- 2 Ramp adjustment button. Sets Ramp Rate ($^{\circ}\text{C}/\text{min}$)
- 3 Time adjustment button.
(Also used to adjust set points)
- 4 LED Display - Gives readout of temperature in degrees centigrade OR elapsed time in hours and minutes.
- 5 LED Indicators - Left LED indicates when the element is ON. Right LED indicates when controller is in SET mode.
- 6 Mechanical Hi-limit set Adjustment Knob (No Scale).
- 7 Mains Switch - applies power to cabinet.
- 8 Hi-Limit Monitor Neon- will come on if power is being applied to heater element while mechanical Hi-Limit is tripped.
- 9 Oven Air Vent – Allows external airflow through cabinet.
- 10 contains an 8A or 10A (CAT 2400 models) fuse.

NB: Items 7 & 10 may be replaced by a 10A Circuit Breaker on some models.

SECTION 4 THEORY OF OPERATION

This CONTHERM General Purpose Oven uses a single chip microprocessor electronic PID controller with a 1000 Ω Resistance RTD probe as the temperature sensing element. The LED display gives a direct readout of the SET POINT or Cabinet temperature in degrees centigrade.

The air inside the oven is circulated by a small stirring MOTOR which draws air in at the top of the chamber and discharges it down behind a false back to the bottom, resulting in a vertical air flow.

The sheathed HEATING ELEMENT is located adjacent to the air rotor such that the discharged air passes over the active portion of the element.

The chamber temperature is measured by a RTD SENSOR the resistance of which increases with increasing air temperature. This change of resistance is used by the ZP21 CONTROLLER to regulate the cabinet temperature to the desired value.

Setting and Calibration of the chamber temperature is performed via the adjustment buttons and is stored in non volatile memory. Settings will typically be retained for up to 100 years even in the absence of power.

The type of cabinet (OVEN, INCUBATOR, C or MCP) is selected at the factory by special button sequences during the power on period and stored in the non volatile memory.

SECTION 5 TROUBLESHOOTING AND MAINTENANCE

MAINTENANCE

The epoxy powder coated mild steel exterior is resistant to corrosion and spillage's and should be wiped with a damp cloth occasionally to maintain its appearance.

The inside of the outer door is powder coated mild steel and is susceptible to moisture. If left wet for long periods rust spots may occur.

The fan motor bearings do not require lubrication under normal conditions however prolonged operation above 200°C will result in a reduced motor life.

Prolonged operation at temperatures above 260°C will shorten the gasket life causing it to become brittle.

It is suggested for every 5 hours above 260°C that the temperature is reduced to below 260°C for 2 hours.

The stainless steel interior and shelves should be kept clean with a damp cloth. Take care that the temperature probe is not damaged during cleaning of the interior base.

Any spillage or breakage within the cabinet should be cleaned up immediately with the cabinet switched off and unplugged at the mains.

ROUTINE MAINTENANCE

Suggested to be checked Annually:

- Check oven door seal for cuts and splits, replace if required.
- Check controller overlay for damage, replace if necessary.
- Check basic cabinet control functions and that user hi-limit control is set appropriately.

ELECTRICAL SAFETY

This appliance should be tested for insulation and earthing continuity at regular intervals according to **AS/NZS 3760**.

The basic safety checks and tests on electrical appliances required by **AS/NZS 3760** are:

1. A visual check to ensure that there is no mechanical damage to the supply cord, that controls etc. are in good working order and that no parts are missing.
2. An earth continuity test.
3. An insulation resistance test.

In order to provide evidence of compliance, a label (signed and dated by the person testing the equipment) may be placed on the tested appliance.

TROUBLESHOOTING:

- A) **CABINET COMPLETELY DEAD:**
- Check wall socket and wall socket circuit breakers.
- B) **LARGE TEMPERATURE VARIATION IN CABINET, CONTROLLER 'HEATER' LED PULSING :**
- Internal fan not operating (Check for air movement inside cabinet).
- Cabinet OVERLOADED with samples, remove some samples to allow for better air movement.
- Look for HI-LIMIT Monitor neon coming on, if so indicates mechanical Hi-Limit is set too low.
- C) **CABINET NOT CONTROLLING AT TEMPERATURE, 'HEATER' LED NOT FLASHING :**
- Check that the timer has been correctly set, if the timer is set to '0:00' the cabinet will NOT operate.
- E) **CABINET NOT FUNCTIONING NORMALLY or CALIBRATION SHIFTED FROM NORMAL or '4---' ALARM AT 104° or CANNOT SET CORRECT TEMPERATURE RANGE:**
Confirm controller set type by turning cabinet off at main switch. Wait 10 seconds. Turn back on while holding down BOTH the 'TEMP' & 'TIME' buttons together and when the 8888's appear on the LED display immediately release the buttons and quickly press and hold the '**RAMP**' button - an answering 'BEEP' 'BEEP' should be heard

REMOVAL AND REPLACEMENT OF ZP21 CONTROLLER PCB

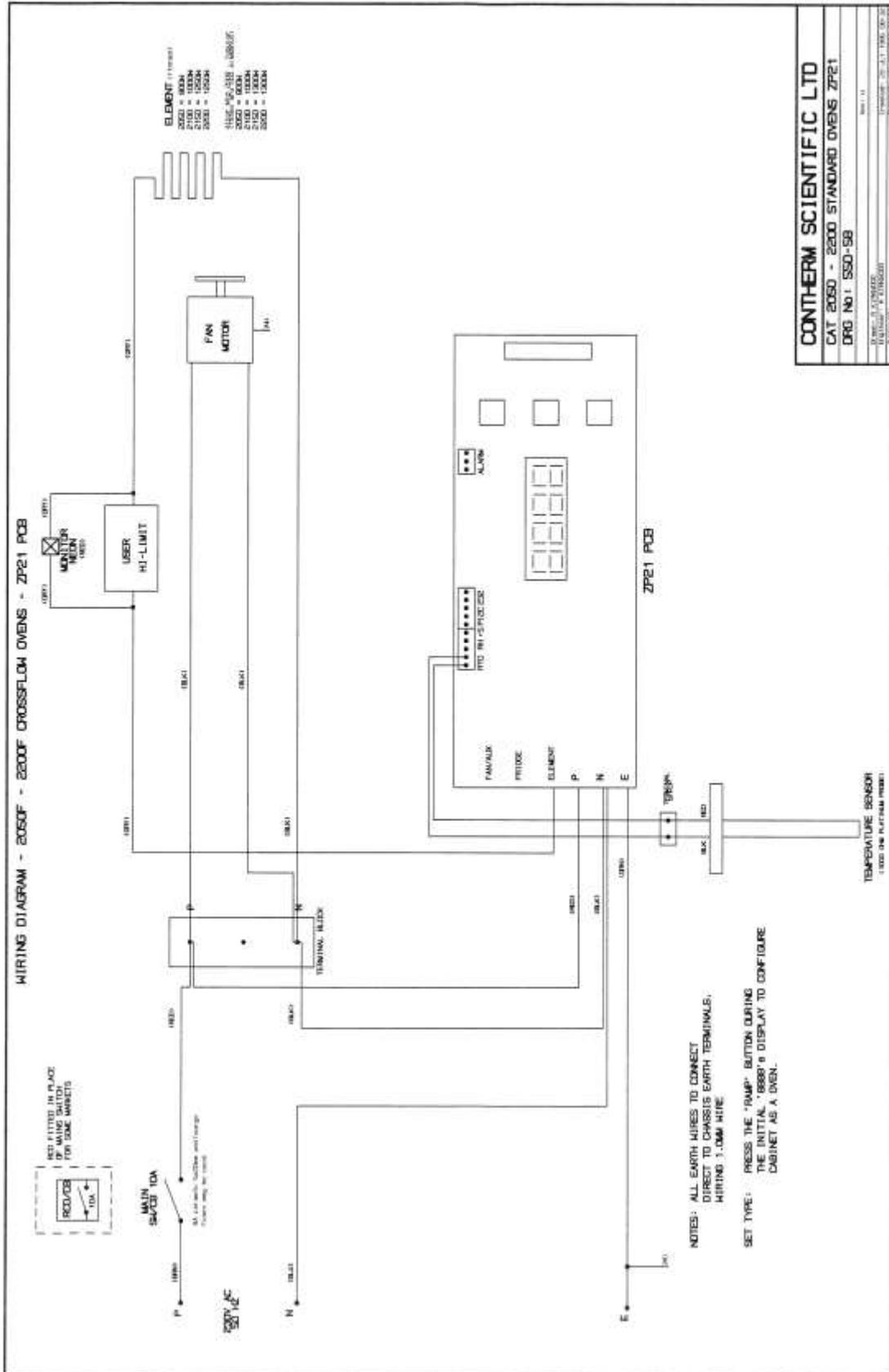
The following should only be carried out by suitably qualified electrical personnel.

NB: ENSURE that power cord has been **REMOVED** from the wall socket **BEFORE** attempting to remove the PCB.

- a) Loosen the two black plastic fasteners holding the cabinet lid down by turning anticlockwise so that the pop up. Lift the lid up at the front and remove from cabinet.
- b) Remove the oven vent knob then the two self tapping screws at either end of the control panel and rotate the panel up so that it rests on the cabinet top.
- c) **ENSURE POWER CORD is REMOVED** from wall socket then Unplug socket from Controller PC Board. NOTE connections from side 10way socket to sensor probe etc so that they can be correctly reinstalled, then disconnect probe etc from socket.
- d) Using suitable socket undo four 4mm securing nuts. Carefully NOTE position and size of SPACERS
- e) Remove PC Board.
List FULLY all fault details, carefully pack, return to Agent for repair. ALWAYS supply contact details and FULL physical return address.
The refitting of the controller should be done in the reverse order as above, taking care when reconnecting the sensor etc that they are connected to the correct socket holes.
- f) Carry out Insulation (use 500V insulation tester) and earth continuity check BEFORE applying power to cabinet. (as per **AS/NZS 3760** – In-service safety inspection and testing of electrical equipment).
The basic safety checks and tests on electrical appliances required by **AS/NZS 3760** are:
 1. A visual check to ensure that there is no mechanical damage to the supply cord, that controls etc. are in good working order and that no parts are missing.
 2. An earth continuity test.
 3. An insulation resistance test.

In order to provide evidence of compliance, a label (signed and dated by the person testing the equipment) may be placed on the tested appliance.

N.B: Check for loose wires that may have been missed, particularly the earth wires.



CONTERM SCIENTIFIC LTD
 CAT 2050 - 2200 STANDARD OVENS ZP21
 DRG No: 550-58

Rev: 1.0
 10/01/2011
 10/01/2011

SECTION 6 PARTS LISTS AND SPARES

Shelves	Cat 2050 Cat 2100 Cat 2150 Cat 2200/2300/2400	GP2051 GP2052 GP2053 GP2054
Shelf Support Brackets (State Model when ordering)		GP2064
Fan Motor	E.G.O	GP2000
Elements	Cat 2050 800W Cat 2100 1000W Cat 2150 1300W Cat 2200 1300W Cat 2300 1600W Cat 2400 1800W	ELEMEGO800 ELEMEGO1000 ELEMEGO1300 ELEMEGO1300 ELEMEGO1600 ELEMEGO1800
Temperature Sensor: 1000Ω RTD		GP2307
Hi-Limit Thermostat: Oven		GP2022
Mains Switch / Circuit breaker (10A)		
Control Knob		GP2324
Control Circuit Board: ZP21		GP2306
Solid State Relay 'OPTO 22' 240A10 AC Control (CAT 2300, 2400 ONLY)		GP1188
Monitor Neon		GP2073
Seal		GP1190

PACKING INSTRUCTIONS

Installation Quality Check List (IQ)
(Leave with Cabinet)



CONTHERM CAT.No
(Standard Oven)

App No:

Date:/...../.....

Accessories Supplied

<u>Accessories Supplied</u>	<u>Qty</u>	<u>(IQ)Checked</u>
Operating Manual	[]	[]
Shelf Runners (pairs)	[]	[]
Shelves	[]	[]
IEC Mains Lead	[]	[]
Other.....	[]	[]

Cabinet Undamaged when Packed [] When Received []
(No dents, scratches or obvious damage)

Certificate of Conformance Completed [] []
(Factory test sheet attached)

Ensure cabinet has been fully tested
and approved for packing . [] []

Ensure data plates are fitted. [] []

Interior and exterior clean. [] []

Cabinet Installed as per installation Instructions:
(See SECTION 3 of the operating manual) []

Installation Verification (IQ) Satisfactory: [Y][N]

PACKED BY

(IQ)CHECKED BY

Date:/...../.....

Date:/...../.....

OPERATION VERIFICATION INSTRUCTIONS

Operational Quality Check List (OQ)
(Leave with Cabinet)



CONTHERM CAT.No
(Standard Oven)

App No:

Date:/...../.....

<u>Operation</u>		<u>(OQChecked)</u>	<u>Comments</u>
LED Display working <i>(Manual SECTION 3 – 8888's during powerup)</i>	[]		
Able to adjust SET POINTS <i>(Manual SECTION 3 – set for 150.0°C)</i>	[]		
Temperature stable @ 150°C <i>(Allow cabinet to stabilise at temperature for 1 hour)</i>	[]		
Check Alarm Operation <i>(Open door for 30mins after cabinet stabilised)</i>	[]		
Check Alarm Cancellation <i>(Manual SECTION 3 – Press 'temp' button until 'set' led on)</i>	[]		
Check HI-LIMIT Control <i>(Manual SECTION 3 – turn anticlockwise when stabilised)</i>	[]		
Calibrate at temperature at 150°C <i>(Manual SECTION 3 – Calibration @ 150 or temperature of interest)</i>	[]		

Operational Performance (OQ) Satisfactory: [Y][N]

(OQ)CHECKED BY

Date:/...../.....

PERFORMANCE VERIFICATION INSTRUCTIONS

Performance Quality Check List (PQ)
(Leave with Cabinet)



CONTHERM CAT.No
(Standard Oven)

App No:

Date:/...../.....

Operation

(PQChecked)

Comments

Check Temporal Variation @ 105°C

[]

(Refer manual for specification, cabinet empty, center only, see verifying cabinet performance in the manual)

Performance Verification (PQ) Satisfactory: [Y][N]

(PQ)CHECKED BY

Date:/...../.....

