Product Manual **EIE – 101DP Hot Air Oven Apparatus**

EIE INSTRUMENTS PVT. LTD.

www.eieinstruments.com, www.eiepharmatest.com, www.eieceratest.com, www.eiepetrotest.com

Office:1001/1002, Span Trade Centre, Opp. Kochrab Ashram, Nr. Paldi Circle, Ashram Road, Paldi, Ahmedabad-380006.
Factory: B-14, 15, 16, Zaveri Ind. Estate, Opp. Shyam Villa Society, Nr. Sarswati Vidhyalaya,

Off. Indore National Highway, Kathwada, Ahmedabad - 382430

PAN: AABCE4018L | **CIN:** U29199GJ2004PTC045078 | **GST**: 24AABCE4018L1ZU | **EMAIL:** info@eieinstruments.com

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Once again, thank you for your trust and kind patronage. We look forward to serve you better in future.

Yours sincerely,

EIE Instruments

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1. Introduction to EIE - 101 Laboratory Oven

Hot air ovens are electrical devices generally used in laboratory sterilization, drying and baking processes. EIE – Hot air ovens are also used in research laboratories, Industrial quality control laboratories, Hospitals, Medical colleges & aggregate testing and other similar places where the testing and experimental research works are required to be carried out at constant and higher temperature. Primarily, it is used for drying, baking, ageing, softening, moisture determination, sterilization and other temperature specific requirements up to 250 ºC. (Higher temperature models are also available). EIE – 101, Hot air oven is manufactured in two different kinds of model as per the customer requirement. The model takes similar exterior look, but it differs in a way the temperature is controlled inside the oven chamber. Depending on a way temperature is being controlled inside the oven chamber, different control accessories are incorporated within the unit. The temperature is controlled in two different ways. Using thermostat and using micro-processor based PID temperature controller.

2. Principle of Hot air oven

Laboratory ovens are manufactured in numerous different configurations including clean room ovens, forced convection ovens, horizontal airflow ovens, inert atmosphere ovens, natural convection ovens, vacuum ovens and pass through ovens. The Hot Air Oven removes moisture from the chamber as quickly as possible in order to dry samples. The more air that moves over the samples and the more air that is evacuated from the chamber, the faster the samples will dry. It is also used to determine the effect of ageing on various physical properties of any type of materials i.e. Fabrics, Yarns, Plastics, Paper, etc. The material is usually kept inside the oven so that effects of long-term ageing are reproduced within a much shorter duration of time.

3. Component diagram of Hot Air Oven

3.1 Component diagram of a Thermostatic oven

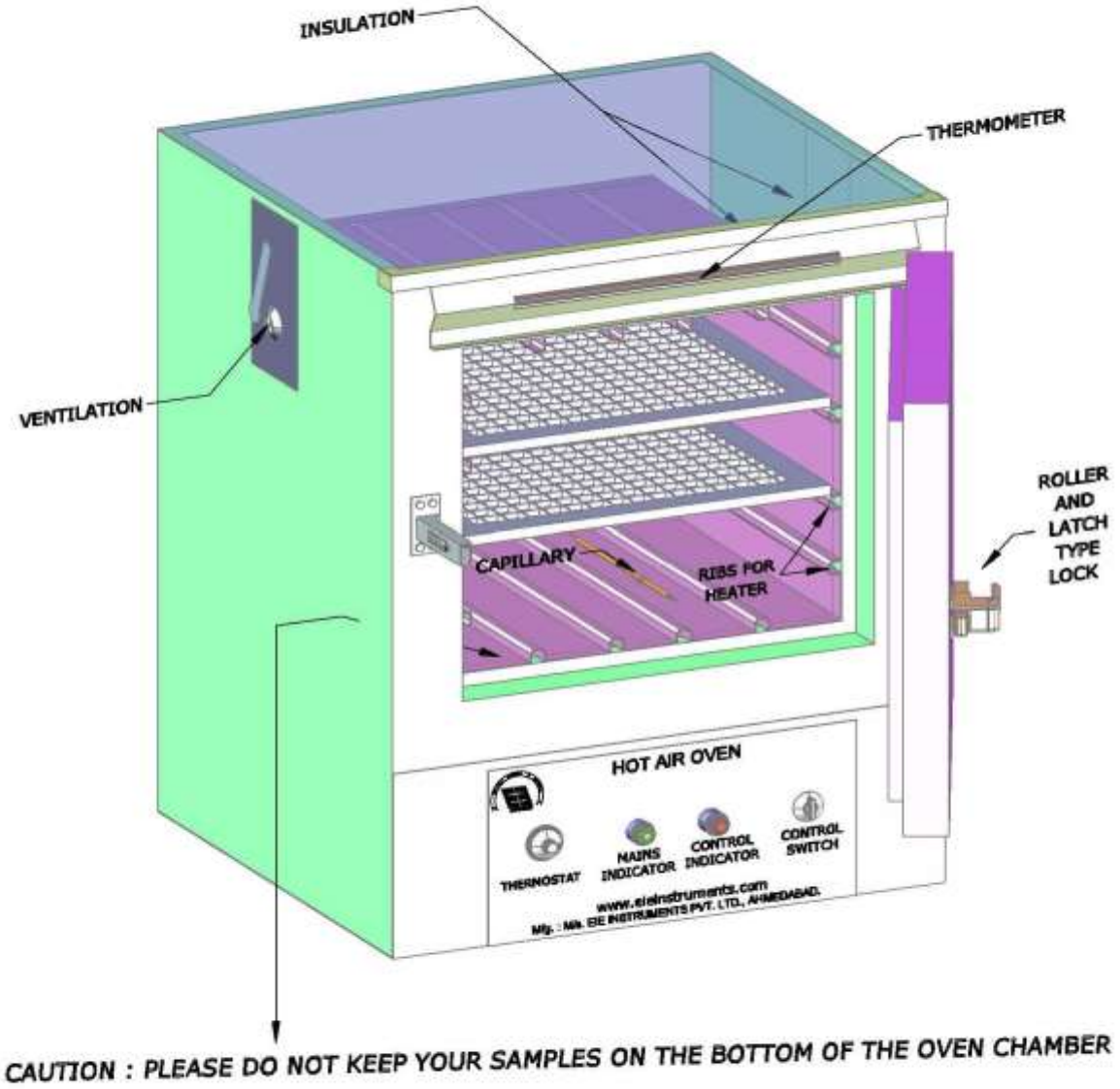


Figure 1 : Hot air oven with thermostat as a temperature controller

3.2 Component diagram of a Digital hot air oven

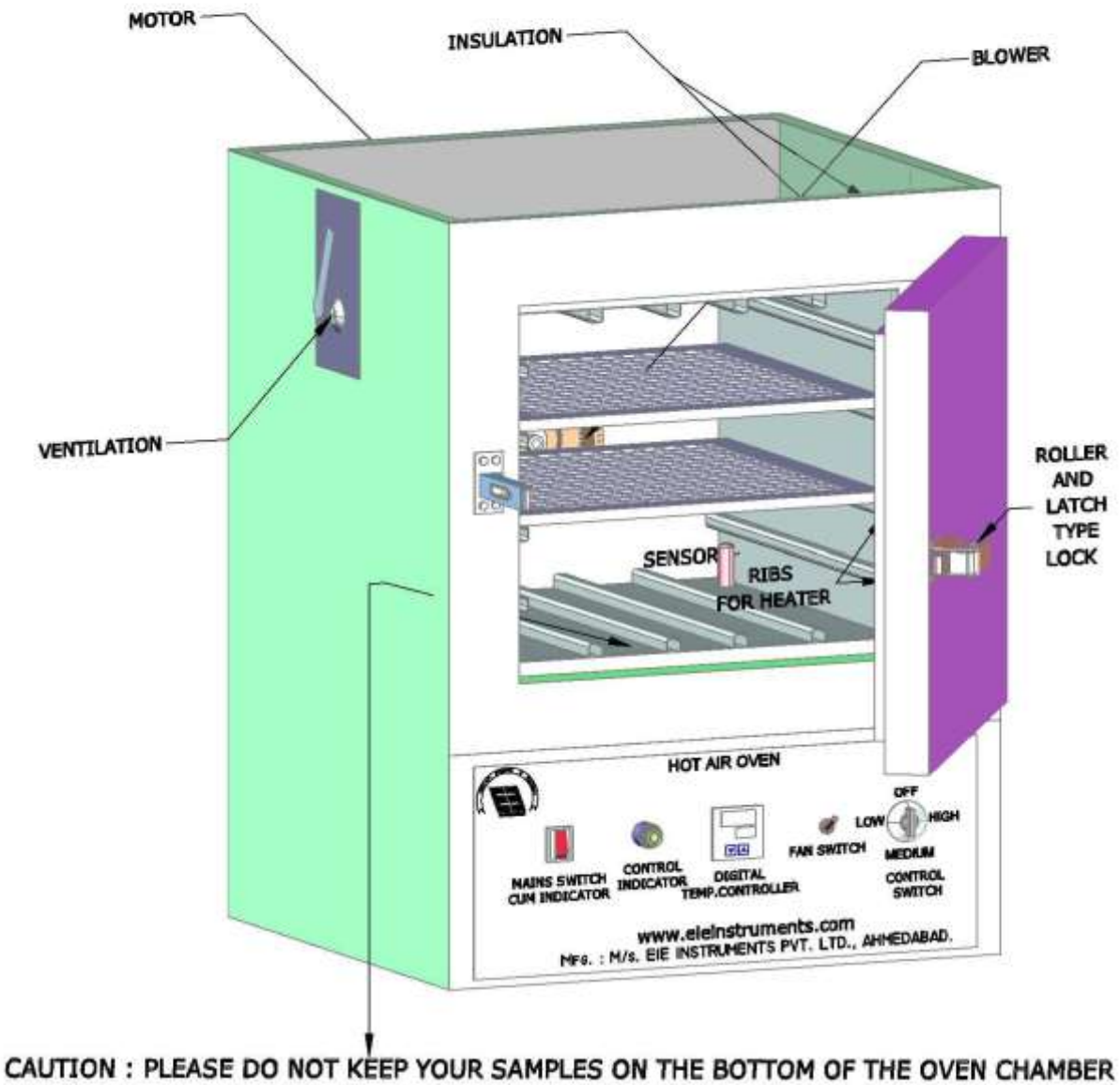


Figure 2 : Hot air oven with Microprocessor as a temperature controller

4. Brief construction details

EIE Hot Air Oven is ergonomically designed with latest German Technology for guaranteed performance.

1) The EIE hot air oven is a double walled convection heated unit.
2) The double wall layer is supplied with separate inner chamber and exterior body wherein they do not have direct physical contact with each other.
3) Inner chamber is made up of stainless steel with great care in order to eliminate the sharp edges.
4) All external cases of oven are constructed out of mild steel undergone with strong seamless welding and covered with a thick layer of finished & attractive powder coating paint. This provides robust and heat resistant surface having long-lasting attractive finish.
5) The gap between the double walled layer is filled with thick mineral glass wool to prevent the direct heat losses and leakages and to ensure the maximum thermal efficiency.
6) The unit is fitted with a single door having special roller and spring type latch for proper locking arrangement. A specially fabricated door having silicon rubber gasket fixed at its edges keeps the inside temperature completely stable.
7) The fixed ventilators are provided on both sides of the hot air oven wall.
8) The heating is achieved by 80/20 Nichrome wires installed as part of heater element. The unit has 2 special Heaters. The Heaters are made of high-quality Nichrome wire and finest ceramic Beads. Heating element is placed at the bottom of the instrument as well as on both the sides of the unit.
9) Precise Temperature control is obtained by sensitive thermostat or by Microprocessor based PID temperature controller (Advanced model) for ease of operation.
10) The specially fabricated footrest keeps the whole oven in correct equilibrium.
11) The unit is fixed with Caution and other stickers, as per International Safety norms.

5. Circuit diagram of Hot Air Oven

5.1 Circuit diagram of a Thermostatic oven

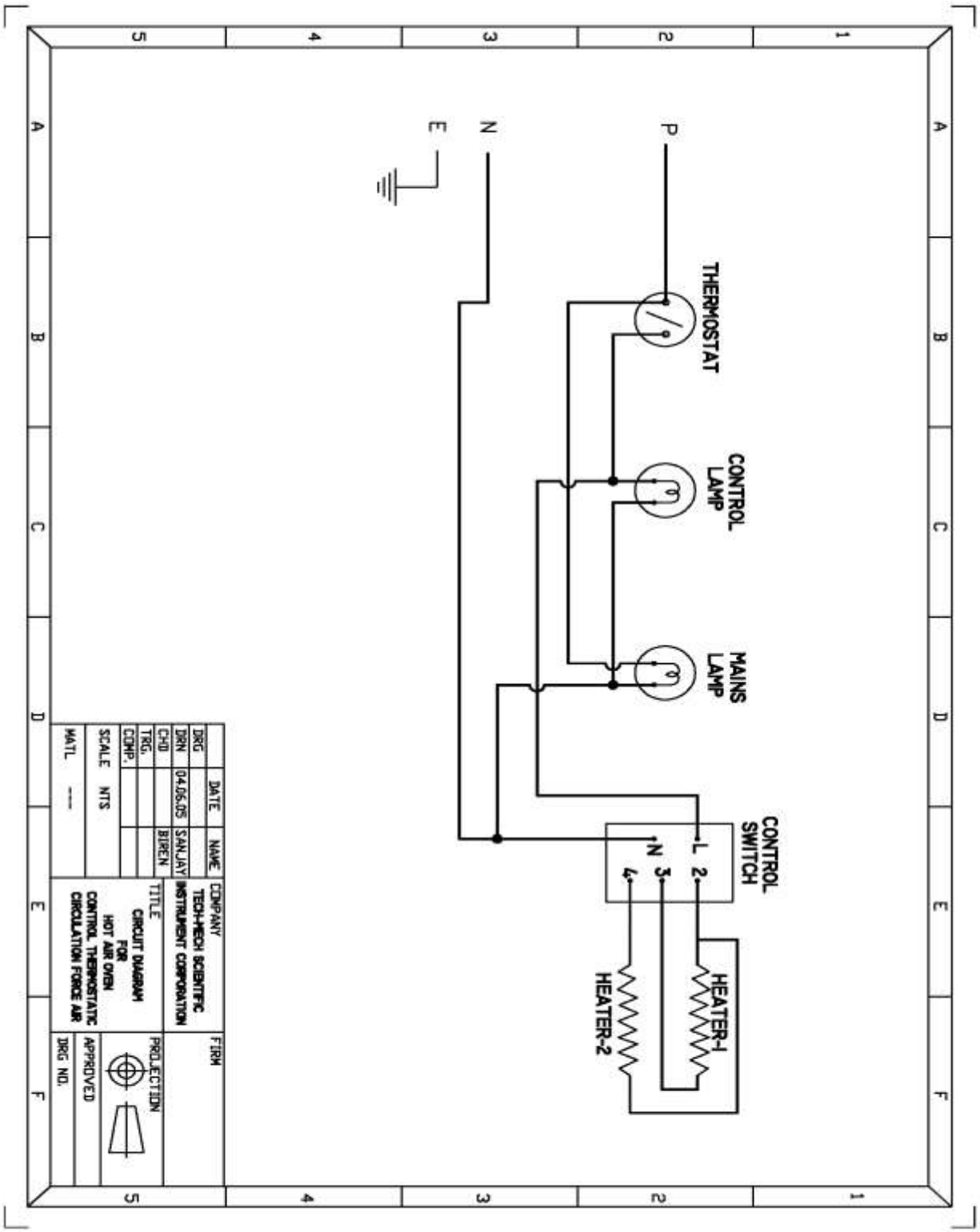


Figure 3 : Circuit diagram of thermostatic hot air oven

5.2 Circuit diagram of a Digital oven

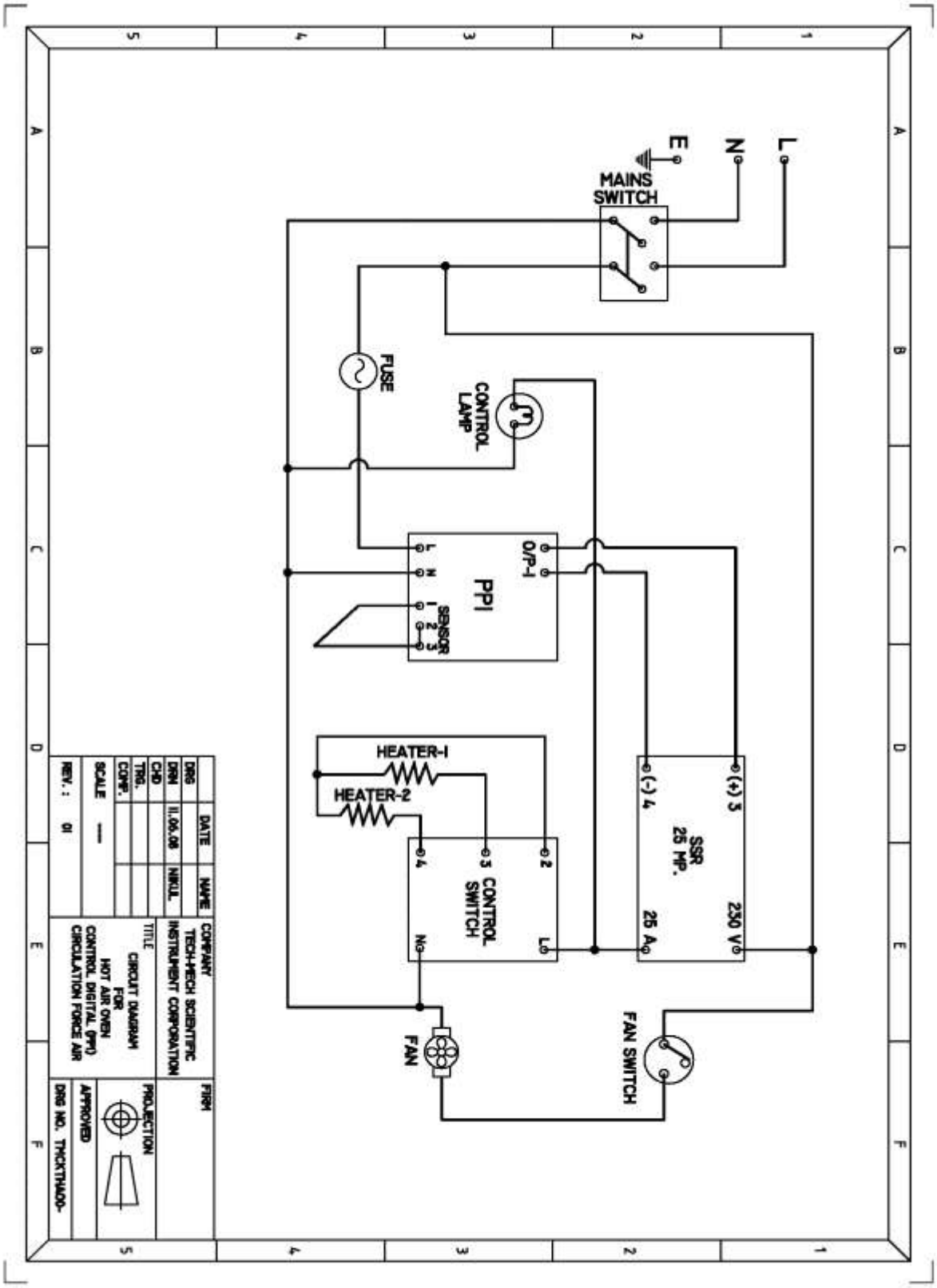


Figure 4 : Circuit diagram of a digital hot air oven

6. Introduction to control panel accessories

The control panel at the bottom of the unit encompasses different control accessories according to selected model. These control accessories differ in a way the temperature is controlled inside the oven chamber.

6.1 Hot air oven with Thermostat as a temperature controller

In thermostatically controlled model, panel on the front side consists of following accessories.

- **Mains indicator :**

  Indicates that the mains supply is on and the unit is currently in the operating mode.

- **Lamp of a heater :**

  The lamp lights up as soon as the operator enters the set-point value and it remains ON (from ambient temperature) till the previously entered set-point temperature value is reached. After the set-point is reached, it is switched off and switched on continuously giving indication of monitoring and maintaining the correct set-point value.

- **Thermostat :**

  Thermostat is a kind of switch which controls the operating temperature of the unit at desired temperature level pre – set by the user. The dial of a thermostat is arbitrarily marked with different temperature points. The dial is marked in the temperature-range between 50 °C to 300 °C. The knob of the thermostat should be rotated in clockwise direction to set the temperature value at desired set-point.

- **Control switch :**

  Control switch is a rotary switch mounted on the front panel. It is marked with four numerical points i.e. 0, 1, 2, and 3. To attain the low, medium and high heating application, the rotary switch should point to corresponding numerical values according to below guidelines.

a) Off-setting : In this process, user should put the control switch at '0'th position indicating that none of the heater is working.

b) Low-setting : When the control switch is kept at '1'st position, both the heaters will remain in series connection and the temperature value up to 70° C can be determined.

c) Medium-setting: When the control switch is kept at '2'nd position, the heater with the maximum kw (kilowatt) capacity works to determine the temperature range up to 150 °C.

d) High-setting : When the control switch is kept at '3'rd position, both the heaters remain in parallel connection and the temperature range up-to 250 °C can be determined.

Control switch position	Configuration of heater	Resulting (kilowatt)	Resulting (ohms)
Low	Two heaters work in series connection	Low	High
Medium	The heater with maximum kilowatt capacity works	Medium	Medium
High	Two heaters work in parallel connection	High	Low

Table 1 : Operation of heater assembly corresponding to control switch positions

6.2 Hot air oven with Digital Temperature Controller (DTC)

In digitally controlled model, panel on the front side consists of following accessories.

- **Mains switch cum indicator**

  In this advanced model, mains switch serves the purpose of switching and indicating both. An operator can switch on / switch off the entire unit from mains switch mounted on front panel. Also, the switch incorporates a lamp inside which indicates that the mains supply is on and the unit is currently in the operating mode.

- **Lamp of a heater**

- The lamp lights up as soon as the operator enters the set-point value and it remains ON (from ambient temperature) till the previously entered set-point temperature value is reached. After the set-point is reached, it is switched off and switched on continuously giving indication of monitoring and maintaining the correct set-point value.

- **Digital temperature controller**

  EIE – 101 Hot air oven incorporates the PID temperature controller to monitor and maintain the set-point temperature value inside oven chamber. A proportional–integral–derivative controller (PID controller) is a generic control loop feedback mechanism (controller) which calculates an "error" value as the difference between a measured temperature value and a desired set-point value. The controller attempts to minimize this error by adjusting the process control inputs.

- **Control switch**

Control switch is a rotary switch mounted on the front panel. It is marked with three numerical points i.e. 0, 1, 2, and 3. To attain the low, medium and high heating application, the rotary switch should point to corresponding numerical values according to following guidelines.

e) Off-setting : In this process, user should put the control switch at '0'th position indicating that none of the heater is working.

f) Low-setting : When the control switch is kept at '1'st position, both the heaters will remain in series connection and the temperature value up to 70° C could be determined.

g) Medium-setting: When the control switch is kept at '2'nd position, the heater with the maximum kw (kilowatt) capacity works to determine the temperature range up to 150 °C.

h) High-setting : When the control switch is kept at '3'rd position, both the heaters remain in parallel connection and the temperature range upto 250 °C could be determined.

- **Toggle Switch**

Toggle switch is provided optionally on the control panel to control the working of fan inside the oven. A circulating fan helps in maintaining & distributing uniform temperature inside the oven chamber.

- **Fuse:**

A glass-fuse of 1 amp is installed in series connection with digital temperature controller as to protect the temperature controller in case of voltage fluctuation and short-circuit scenario.

7. Technical specifications

7.1 Electrical specifications

Following table represents the detailed electrical specifications of EIE - 101 Hot air oven.

Electrical Parameters	Digital	Thermostatic
Power source	220 Volt, 50 Hz, single phase AC (Bigger size models are also available with 440 Volt, three phase AC supply)	220 Volt, 50 Hz, single phase AC (Bigger size models are also available with 440 Volt, three phase AC supply)
Power consumption	According to selected working chamber (To know more about the working chamber size, please refer to the data in table 2)	According to selected working chamber (To know more about the working chamber size, please refer to the data in table 2)
Temperature range	From ambient + 5 °C to maximum 250 °C	From ambient + 5 °C to maximum 250 °C
Temperature accuracy	± 0.5 °C or better	± 5 °C or better
Temperature resolution	0.1 °C	2 °C
Air convection	Forced fan	Forced fan (optional on request)
Temperature control	Through digital microprocessor	Through thermostat
Temperature display	Digital	Read on thermometer fixed at the top of unit
Heating element	Made of Nichrome wire with ceramic insulation beads, Stainless steel sheathed	Made of Nichrome wire with ceramic insulation beads, Stainless steel sheathed
Heater watt	According to selected working size	According to selected working size
No of heaters	2	2
Temperature Sensor	RTD	Thermostat Capillary
Safety devices	SSR (Solid state relay), fuse	Not applicable
Electric motor	1300 rpm, 1/70 Hp power, 230 volt	Not applicable

Table 2. Electrical specifications of EIE – 101 Hot air oven

7.2 Mechanical specifications

Name of elements	Properties
Inside chamber	Stainless Steel-304 quality / Stainless Steel-316 quality (As per order)
Outside body	Mild steel powder coated / Complete stainless steel
Trays (Shelves)	made up of S.S. wire mesh
Insulation	Mineral wool
Weight	According to selected working size (Please refer to table 5)
No of shelves	According to selected working size (Please refer to table 4)
Viewing glass door	Provided on individual request (optional)
Ventilation	Installed as 24mm diameter aluminium pipe on both sidewalls of the unit
Electric motor	1300 rpm, 1/70 Hp power, 230 volt
Blower (Circulating fan)	Made of aluminium material, size : 6" Sweep

Table 3. Mechanical specifications of Hot air oven

The different sizes of inside working chambers and overall dimensions of exterior body relative to corresponding power consumptions are listed in below table for ease of selection & comparison.

Working Size (cm)	Overall dimensions (cm) (D X W X H) Thermostatic model	Overall dimensions (cm) (D X W X H) Digital model	Power consumption (KW)	No. of trays
35 x 35 x 35	50 x 52 x 63	57 x 50 x 72	1.0	1
45 x 45 x 45	60 x 62 x 73	67 x 60 x 82	1.5	2
45 x 45 x 60	60 x 62 x 88	67 x 60 x 97	2.0	2
60 x 60 x 60	75 x 77 x 88	82 x 75 x 97	2.5	3
60 x 60 x 90	75 x 77 x 118	82 x 75 x 125	3.0	3

Table 4 : Comparison of working chamber sizes and overall dimension relative to power consumption

The different sizes of inside working chambers and overall dimensions of exterior body relative to corresponding weight statistics are listed in below table for ease of selection & comparison.

Working Size (cm)	Overall dimensions (cm) (D X W X H) Thermostatic model	Overall dimensions (cm) (D X W X H) Digital model	Approximate weight (kg) (Thermostatic)	Approximate weight (kg) (Digital)
35 x 35 x 35	50 x 52 x 63	57 x 50 x 72	41	52
45 x 45 x 45	60 x 62 x 73	67 x 60 x 82	61	72
45 x 45 x 60	60 x 62 x 88	67 x 60 x 97	68	78
60 x 60 x 60	75 x 77 x 88	82 x 75 x 97	90	110
60 x 60 x 90	75 x 77 x 118	82 x 75 x 125	130	148

Table 5 : Comparison of approximate weights relative to selected chamber size

7.3 Equation to determine the resultant kw and ohms

$$W = V^2 / R$$

Or

$$W = VI$$

Where,

W = power consumption in kilo watt

R = resistance in ohms

I = current in ampere

V = voltage in volt

8. Delivery and Uncarting of apparatus

1. Inspect equipment and shipping crate immediately upon receipt. If any damage is apparent, immediately discuss it with the delivery person and contact the transportation company immediately. Make notes of any damages on the bill of landing.
2. Retain all shipping material for later inspection.
3. Check packing slip carefully and ensure all materials have been received as indicated in packing slip.
4. Remove packing strip from surroundings of the instrument and all its accessories. Please inspect and note whether any part of the instrument is damaged or any accessory is missing according to packing slip? If it is so, then immediately make note of it and report to the manufacturer.
5. Due to the vibration incurred during shipping and handling, it is possible that mechanical connection could become loose. Inspect all connection to ensure that they are secure.
6. After visual inspection, if everything is found to be okay, transit the instrument to suitable safe place where it is intended to install. Caution: Handle with care.
7. Recycle the packing material. Do not throw it away for environment protection.

8.1 How to make instrument ready for use?

1) Keep the equipment in well ventilated place.
2) Place the equipment on a plain, even and sturdy surface leaving approx. 1 – 2 Feet space away from the wall.
3) Do not use equipment in a corrosive environment. A corrosive environment may lead to poor performance and deterioration of unit.
4) Keep instrument away from draft, sunlight, water or near a place of equipment, which emits heat as well as electromagnetic conduction emission.
5) Keep Standard Operating Manual while operating the apparatus.

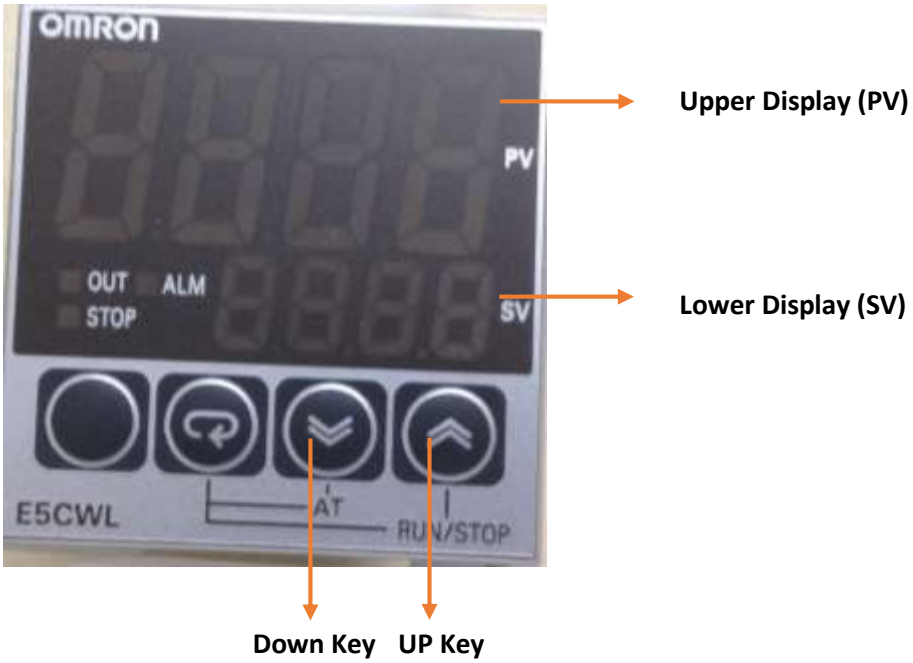
9. Operating instructions

9.1 For thermostatic oven

1) Place the equipment on a plain, even and sturdy surface or a working platform in a way such that the instrument is well balanced and all the control options can be reached with ease and comfort.
2) Clean inside chamber of oven with clean cloth.
3) Check the earthing before establishing connection to the Mains.
4) Unlock the door and load the substances into the chamber carefully. Do not tilt the flask or vessel in chamber.
5) Lock the door completely and inspect if there is any leakage from door surroundings.
6) Connect the three pin plug to mains socket board only after ensuring all the safety instructions.
7) Press the mains switch on mains socket board to switch the power on; the corresponding indicator lamp will be illuminated at the same time.
8) Pre-set your desired temperature by rotating thermostat in clock-wise direction and maintain the set-point value by adjusting the corresponding control switch position. Corresponding temperature value can be observed on thermometer kept at top of the unit.
9) It may happen that sometimes thermometer readings deviate from set-point value. During this time, it is necessary to take corrective actions by increasing/decreasing the actual set-point value as per the required offset (temperature-degree) amount. For example, if user has set thermostat knob on 100 °C, but the thermometer reading is showing only 95 °C, then it is known as temperature value has deviated from the set-point value. During this time, to attain actual 100 °C value, user should keep thermostat knob on 105 °C to obtain required temperature value of 100 °C. Hence, an operator has created an offset of +5 °C in this case.
10) Remember to keep your samples inside the Oven chamber before setting the set-point value. Ensure that the required temperature is maintained throughout the heating application.
11) Switch off the mains after completion of your operation.

9.2 For digital oven

9.2.1 How to set Temperature in controller?



PV → For Process value (Red display)

SV → For set value (Green/white display)

There are four tactile keys provided on the front panel for configuring the controller and setting up the parameter values.

- **DOWN KEY** : Press to decrease the Temperature value.
- **UP KEY** : Press to increase the Temperature value.

To set the temperature for heating of the sample, press UP (Arrow key) to increase the temperature value as per desired set point is increased than release the key at that point, set value will be auto saved and repeat the same process to decrease the value.

NOTE:

The controller is factory set and it does not require any settings except required temperature.

9.3 Standard Operating Procedure

1) Place the equipment on a plain, even and sturdy surface or a working platform in a way such that the instrument is well balanced and all the control options can be reached with ease and comfort.
2) Clean inside chamber of oven with clean cloth.
3) Check the earthing before establishing connection to the Mains.
4) Unlock the door and load the substances into the chamber carefully. Do not tilt the flask or vessel inside the chamber.
5) Lock the door completely and inspect if there is any leakage from door surroundings. If leakage is detected, then take necessary corrective actions.
6) Connect the three pin plug to mains socket board only after ensuring all the safety instructions.
7) Press the switch available on mains socket-board to switch the power on. Now, press the mains switch cum indicator lamp provided on the front panel of the unit to switch on the unit
8) As the mains switch will glow, the digital microprocessor based PID controller will indicate surrounding room-temperature (ambient temperature) in RED digits at top of the line while the bottom line with GREEN digits will indicate the set-point temperature value.
9) Now, gently open the chamber door and keep your test samples inside the oven chamber before establishing set-point temperature value.
10) Pre-set your desired temperature value by pressing up/down arrow key on microprocessor and maintain the set-point value by adjusting the corresponding control switch position.
11) After setting the desired set-point value, press the enter button and switch on the fan switch in order to distribute uniform heat inside the chamber.
12) Now, controller will automatically tune and start to maintain the set-point temperature.
13) Ensure that the required temperature is maintained throughout the heating application.
14) Soak timer and alarm can also be incorporated within the unit on individual customer request. Soak timer monitors the set-point value for pre-set period of time and after completion of the specific time interval, it will automatically switch off the heating elements leaving only the mains indicator on. Also, installed alarm will start buzzing once the pre-set time interval is over to inform an operator moved away from the place of operation. (Please refer to separate Microprocessor manual provided with the unit for soak-timer operation.)
15) Switch off the mains after completion of your operation.

Warning:

Hot Chamber: The chamber will become hot and remain hot without visual indication for some time after use. Always use the handle and hand-gloves to remove the hot substances from chamber to avoid personnel injury.

10. Direction to clean the oven

1) Disconnect from power supply prior to cleaning.
2) Use the moist cleaning cloth to clean the exterior case and interior chamber.
3) Dry the equipment thoroughly.
4) Do not immerse the equipment in water
5) Wear gloves while cleaning the equipment.
6) Remove shelves and clean with wet cloth. Dry shelves thoroughly and then place into chamber again.
7) Never use benzene or paint thinner for cleaning.

11. Things to remember while operating the unit

1) Switch on the Mains supply. Mains indicator should glow now, which indicates that the instrument is in operating mode. If it does not glow, then there is something wrong with the power supply or mains cable. Please ensure both the possibilities before moving further.
2) In case of thermostatically controlled model, rotate thermostat temperature knob in clockwise direction as explained earlier and set the knob point to desired temperature value arbitrarily marked on the dial of a thermostat. On setting the temperature value, thermostat indicator should also glow. In case of digital temperature controller, please adjust the set-point value by pressing up/down arrow key whichever is required.
3) As explained earlier in case of thermostatically controlled oven, the dial of the thermostat is arbitrarily marked. It does not always control the temperature at exact set point. For exact temperature reading, refer to the L shaped thermometer mounted at the top of the oven door.
4) Never try to alter the predefined safety temperature limit of the hot air oven. In case of digital oven, it is factory set and password protected in the PID controller. The unit is capable to operate up to 300°C, but due to safety precautions the maximum temperature limit is set till 250 °C only.
5) The red digits at the top display in microprocessor PID control indicate the ambient temperature value, while the green digits at the bottom indicate the set-point temperature value.
6) Leave instrument working only in balanced and secured condition.
7) The set temperature can slowly and gradually be attained which an operator can observe on a thermometer (thermostatic oven) / PID temperature controller (Digital oven).
8) Please remember to touch and operate Microprocessor buttons with gentle touch. Do not operate the PID micro-controller rigidly. Also, in case of Thermostatic oven, please remember to operate the thermostat knob softly.

12. Maintenance & services

1) Always disconnect from power supply prior to maintenance & servicing.
2) To avoid electrical shock, this equipment must always use a properly grounded electrical outlet or correct voltage and current handling.
3) Disassembly of this equipment is strictly limited to the qualified personnel and licensed engineers.
4) Maintain a safe distance of at least 5" to 6" from the wall while installing the oven.
5) Please do not overload the working chamber with excessive test samples. This will prevent free air circulation as a result of which uniformity of temperature throughout the chamber cannot be attained.
6) Always check if the door is locked properly leaving no air leakage at all.
7) Please open and close the door gently.
8) Recommend to replace the door gasket on yearly basis.
9) Make sure the air vents on both sides of the unit are able to adjust smoothly.
10) Ensure that ventilation shutters at both sides of the oven remain opened to complete the air circulation cycle.
11) Clean the sensor near the heating element leaving sensor activate precisely.
12) Never place any test samples near the sensor element as it will affect and damage its accuracy.
13) Never place test samples directly on bottom part of the oven chamber as the controlling circuit/wiring of the entire unit is installed below this part.
14) The hot air oven is supplied with the brush-less AC motor, hence there is no need to replace the carbon brush.
15) Keep the instrument tidy, clean and dry with mint cream. Before initiating the fresh day, use preferably clean soft cloth. Brush up the unit body as to maintain its colour and finishing.
16) Never leave the instrument connected to mains after completion of heating application.
17) In case of any difficulty, please do not try repairs without consulting us, especially when the instrument is under guarantee period.

13. Troubleshooting

13.1 Troubleshooting for Thermostatic Hot air oven

Cause	Reason	Solutions
Heater is not working (Heating is not achieved inside the oven chamber)	1) End terminals of heater element may have lost the circuit connection.	1) Turn the oven upside down or rest it on the side walls. Remove the bottom cover. Find out the loosen end terminal of heater and fix it.
	2) An operator may have kept the control switch on “0 th” position.	2) Keep the control switch position on low, medium or high according to user requirement.
	3) Thermostat may have stopped working.	3) Replace the Thermostat.
	4) Control switch may not be functioning.	4) Replace the control switch.
Unit is completely dead. No part of it is working.	1) Required operating power may not be available.	1) Check the available mains power in the socket with the help of tester or multi-meter.
	2) Mains cord wire may have been damaged.	2) Replace the cord wire.

Table 6 : Troubleshooting methods for Thermostatic Hot Air Oven

13.2 Troubleshooting for Digital Hot air oven

Cause	Reason	Solutions
Heater is not working (Heating is not achieved inside the oven chamber)	1) End terminals of heater element may have lost the circuit connection.	1) Turn the oven upside down or rest it on the side walls. Remove the bottom cover. Find out the loosen end terminal of heater and fix it.
	2) An operator may have kept the control switch on "0 h" position.	2) Keep the control switch position on low, medium or high according to user requirement.
	3) SSR (Solid stat Relay) may have stopped working.	3) Check Input voltage of SSR, it should be 3 to 12-volt DC and output voltage should be 230 volts AC. ▪ If input is 3 -12 – volt not available, DTC may be faulty. ▪ If 230 volts AC not available SSR may be faulty, Replace the SSR.
	4) Output dc voltage of 3-24 V from micro-controller is not supplied to SSR and in turn, SSR is not able to supply 230 V to heater elements.	4) Send micro-controller to factory plant for repairing purpose.
	5) Control switch may not be functioning.	5) Replace the control switch.
Top RED digits of controller displays "OPEN"	a) Sensor may not be functioning properly.	a) Check the Sensor. It should indicate between 110 – 115 ohms, check it with the help of multi-meter. If found faulty replace it.

Unit is completely dead. No part of it is working.	1) Required operating power may not be available. 2) Mains cord wire may have been damaged. 3) Mains switch cum indicator on control panel may not be working.	1) Check the available mains power in the socket with the help of tester or multi-meter. 2) Replace the cord wire. 3) Replace the mains switch cum indicator.

Table 7 : Troubleshooting methods for Digital Hot Air Oven

14. Test report

Test report number	
Test report issued to	M/s
Name of equipment	
Model number	EIE – 101/103
Serial number	
Date	
Tested by	
Certified by	

1. Electrical specifications:

Temperature range	Ambient to 250 °C / 300 °C
Temperature accuracy	± °C or better
Temperature controller	
Serial number of Digital temperature controller	

2. Mechanical specifications:

Inner chamber size		
Overall unit dimensions		
Material of construction	Inner chamber	Aluminium ☐ or Stainless steel ☐
	Exterior body	C.R.C. ☐ or Stainless steel ☐

3. Specifications of Heater:

Rating of heater	Heater 1	watts
	Heater 2	watts
No of heaters		
Total heater ratings		watts

4. Specification of electric motor:

Make	
Revolution per minute (rpm)	
Horse power (H.P.)	

5. Resulting ohms at various control switch positions:

Low	
Medium	
High	

6. Specification of SSR (Solid state relay)

Total no of SSR used	
Rating of SSR	

7. Readings:

Serial No.	Temperature set-point (°C)	Control switch position	Indicator temperature (°C)		Rising temperature (°C)
			Lamp on	Lamp off	

From the above readings and observations, this is to certify that the equipment number EIE – 101 hot air oven meets all the requisites as per the established norms & standards. It functions satisfactory and controls the temperature within the user permissible limits.

Warranty Certificate

Your EIE product is guaranteed to be free from defects in materials and workmanship for one (1) year under normal use from the date of purchase. This WARRNATY does not apply to any product damaged by accident, misuse, mishandling, abuse, negligence, transit, improper line voltage, drop, fire, flood or if the products were altered or repaired by anyone other than the qualified service personnel. The liability of EIE Instruments is limited to repair or replacement and under no circumstances shall EIE be liable for any collateral consequential damages or loss. This guarantee specifically excludes the expendables and consumables.

All warranty claims must be directed to your corresponding purchase organization that is responsible for the sale of this equipment. The users are responsible for shipping expense. The warranty cards which are not signed and stamped by the actual user will be treated as void. The warranty card should accompany the defective products sent for repair, without which no claims would be entertained. Please detach the below warranty card from following cut-line.

Name of the company: ----------

Address: ----------

Telephone no: ----------

Mobile no: ----------

Email address: ----------

Date of purchase: ----------

Product model: ----------

Serial no: ----------

Bill or cash memo no: ----------

This card should be detached, filled in properly and posted within 15 days from the date of purchase otherwise the warranty becomes invalid.

--- End of Document ---

Any Note or Queries

Please write us

Thank you

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