



## **Oil/Liquid Temperature Calibrator**

Temperature Range: Ambient to 250°C



# **EO-250 Instruction Manual**

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## **Preface**

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Congratulation on purchase of “Tunix” make Oil/Liquid Temperature Calibrator Model : EO-250. This instruments is one of the best available in its class.

We have taken enough care in designing and manufacturing to give you trouble free performance for longer period. Before starting the instrument, we suggest you to go through the instruction manual.

## **On Arrival**

Please check for following Standard accessories

- 1) Product is not physically damaged.
- 2) Operating manual With Warranty certificate
- 3) Power Chord.
- 4) Silicon Oil 50 CST. (optional to be ordered separately. )
- 5) 17025 Accredited Calibration Certified( optinal to be ordered separately).

## Technical Specification

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- 1) Temperature Range: ambient temperature to 250 °C
- 2) Display Resolution: 0.1 Deg C.
- 3) Control accuracy: Better than  $\pm 0.1$  °C
- 4) Thermal in-stability:  $\pm 0.05$  °C @100 (after stabilization time of 15 minutes).  
 $\pm 0.06$  °C @250 °C (after stabilization time of 15 minutes).
- 5) Thermal Non-uniformity (Radial):  $\pm 0.06$  °C ( after stabilization time of 15 minutes)@100 °C.
- 6) Stabilization Time/settling time: 15 minutes after set point is achieved.
- 7) Time to reach to 250 °C from ambient temperature: 45 minutes.
- 8) Power supply: 230 VAC @50-60 Hz.
- 9) Current : 6A.
- 10) Power Consumption: single phase ,1000 Watt maximum.
- 11) Oil vessel capacity: 4 Liter  
50 Cst.(Silicon Oil).
- 12) Sound: Less than 30 dB
- 13) Enclosure Metal(MS) Powder Coated
- 14) Weight: 14 Kg without oil.

### Note:

- 1) Stability is calculated as the best data for the period of two minutes after stabilization, the reported value is Sigma( $\sigma$ ), 120 samples taken for the calculation.
- 2) Temperatures above 120 deg C causes fumes which gradually increases with respect to temperature so a exhaust blower is highly recommended to install. Fumes causes serious burning and irritation to eyes

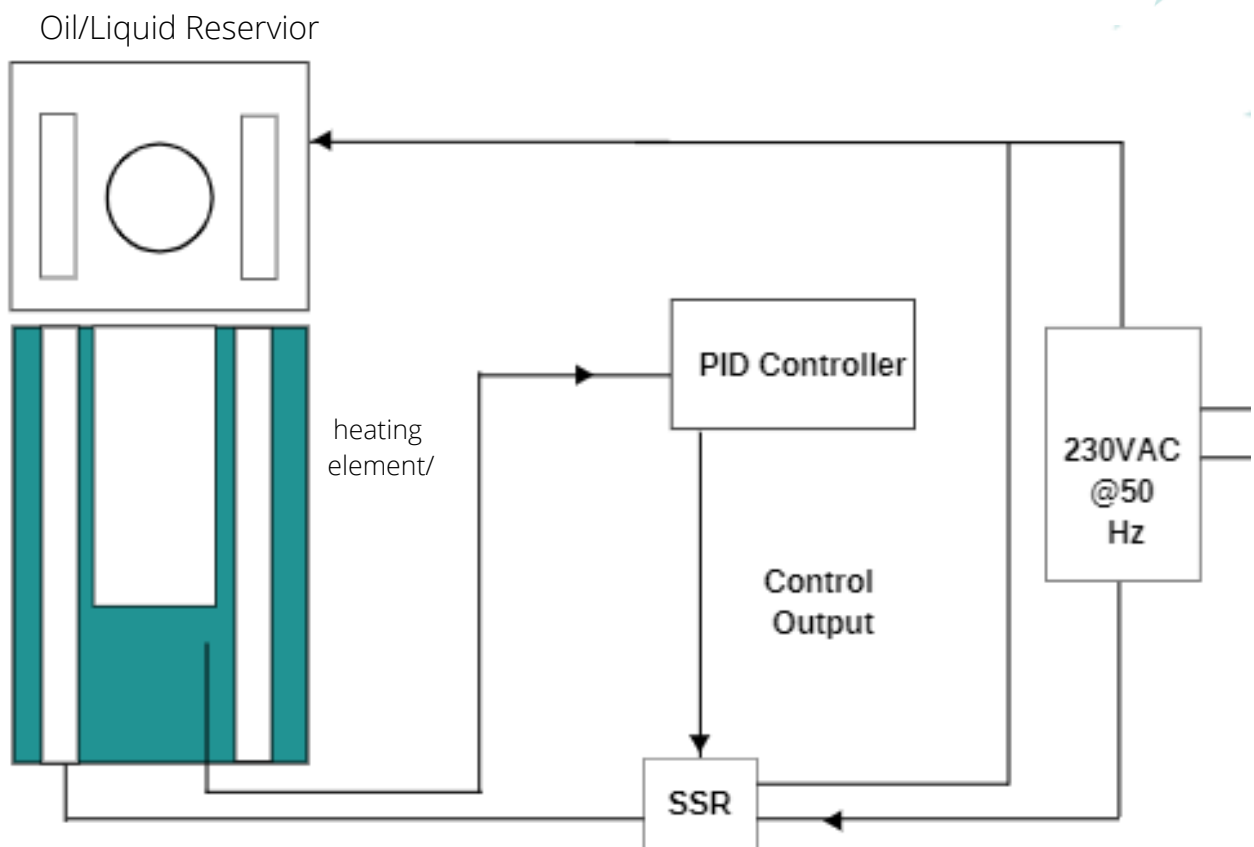
## Operating Principle

You require a stable known temperature source.

The certainty of the calibration depends on

- 1) Stability of the source.
- 2) Uniformity to which the stable temperature is known.

Designed block diagram of EO-250 is given below.



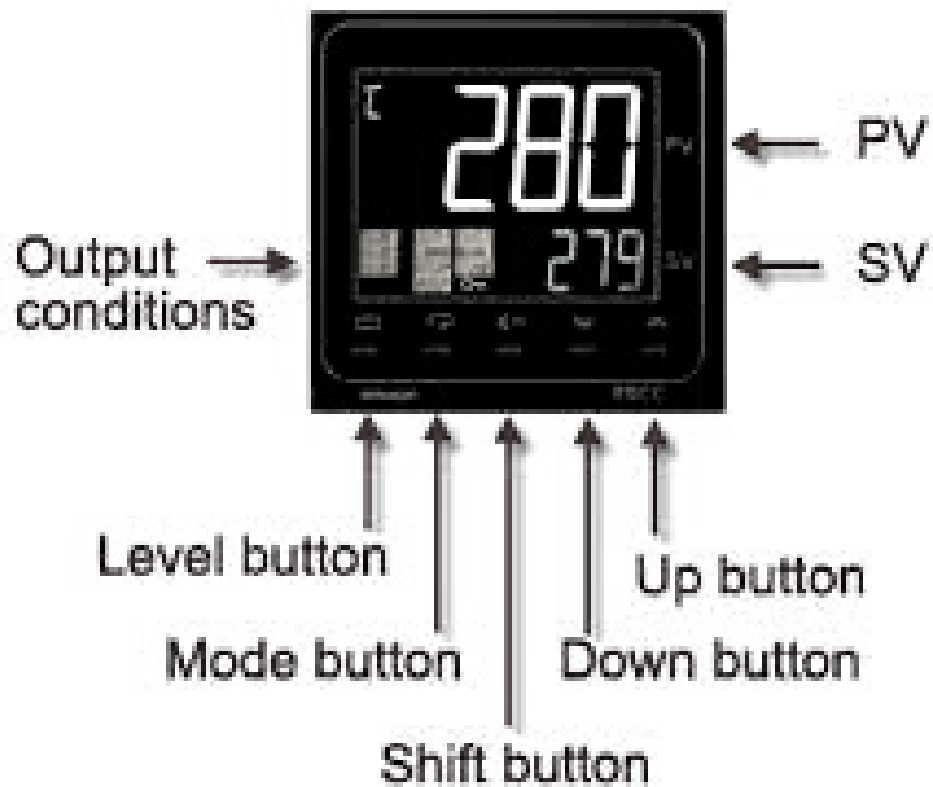
Block diagram of temperature controlling systems

## Operating Principle

### IMPORTANT INSTRUCTION FOR OPTIMUM PERFORMANCE

- 1) Use 10 Amp glass fuse as supplied with instrument.
- 2) 3 Pin Plug used should have 15 amp capacity.
- 3) Cooling fan at the backside of controlling unit should be always on .  
This is required to cool the electronics. Ensure the air passage is not blocked.

### PID Controller



## Safety Measures & Precautions

### Please check for following before you switch on the product

- Never start the system without liquid/ fluid, It will permanently damage the instrument's heating coil
- Always maintain the liquid at the level marked in the vessel at indicated below, neither above the level indicated nor the level below indicated. Filling liquid level high above the indicated level will make the spillage. Hot oil in such case will cause a serious burn injury. Filling the liquid below the indicated level will damage the heating coils permanently



- Always use correct platform. If the product level may increase the vibrations.
- Never carry/transport the product when it is hot.
- Never carry/transport the product when it is hot. Allow it to cool naturally by setting the minimum set point.
- Always use silicon oil(50 CST),
- never use any other oil.

## Safety Measures & Precautions

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- A Glass fuse is used in the supply line to prevent any problem due to failure of heating element. In case of fuse being fused to frequently kindly consult factory.
- In the event of SSR failure temperature gets run away above set value. If it cross the set point by more than 255°C. Switch off the power immediately and consult factory.
- Do not temper wiring as it may be safety hazard.



## Trouble Shooting

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- 1) Calibrator is not reaching set value.  
Check mains for full voltage.
- 2) Calibrator temperature is running over.  
Check terminal 1 &2 of SSR for getting short for ever. If it is short replace it.  
Check for correct polarity in your mains plug. Phase should go through SSR as per design. If phase is not routed through SSR It may not control the temperature.
- 3) Chamber is not not getting on.  
Check mains.  
Check fuse.  
Check tightness of all terminals on controller & main terminal strip.
- 4) Chamber temperature not getting stable.  
Check fan at the bottom cover it should be running.  
Need turning off controller.

# Warranty Certificate

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This is to certify that, Temperature Oil/Liquid Temperature Calibrator Model no EO-250 having Sr. No \_\_\_\_\_ Date \_\_\_\_\_ is properly Tested for workmanship. We Certify our Calibrator for satisfactory performance for the period of one year against any manufacturing defect.

**Name:**

**Date:**

**Signature**

## Checklist

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- 1) Is Instrument working properly .....(Yes/No)
- 2) Is power chord available? .....(Yes/No)
- 3) Is all factory setting parameters of Instrument locked? .....(Yes/No)

**Name:**

**Date:**

**Signature**

# Test Certificate

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Certificate No. : \_\_\_\_\_

Date : \_\_\_\_\_

Model No. : \_\_\_\_\_

Temperature Range : \_\_\_\_\_

Reading On Calibrator	Reading on Master

**Tested By**

**Name:**

**Date:**

**Signature:**