



Oil/Liquid Temperature Calibrator

Temperature Range: -25°C to 100°C

EO-25X Instruction Manual



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Preface

Congratulation on purchase of “Tunix” make Oil/Liquid Temperature Calibrator Model : EO-25X.. 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 5 CST. (optional to be ordered separately.)
- 5) 17025 Accredited Calibration Certified(optinal to be ordered separately).

Technical Specification

- 1) Temperature Range: -25°C to 100°C @ 25°C
- 2) Display Resolution: 0.1 Deg C.
- 3) Control accuracy: Better than $\pm 0.1^{\circ}\text{C}$
- 4) Thermal in-stability:
 - $\pm 0.07^{\circ}\text{C}$ @ -25°C (after stabilization time of 15 minutes).
 - $\pm 0.08^{\circ}\text{C}$ @ 100°C (after stabilization time of 15 minutes).
- 5) Thermal Non-uniformity (Radial):
 - $\pm 0.08^{\circ}\text{C}$ (after stabilization time of 15 minutes)
- 6) Thermal Non-uniformity (Axial):
 - $\pm 0.09^{\circ}\text{C}$ (after stabilization time of 15 minutes)
- 7) Stabilization Time/settling time: 15 minutes after set point is achieved.
- 8) Time to reach to 100°C from ambient temperature: 30 minutes.
 - Time to reach to -25°C from ambient temperature: 50 minutes.
- 9) Power supply: 230 VAC @50-60 Hz.
- 10) Current : 6A Max.
- 11) Power Consumption: single phase ,300 Watt maximum.
- 11) Oil vessel capacity: 0.8Liter 5Cst.(Silicon Oil).
 - Oil Vessel Dimesions: Depth 120mm , Dia: 60mm
- 12) Sound: Less than 50 dB
- 13) Enclosure Metal(MS) Powder Coated
- 14) Weight: 20 Kg without oil

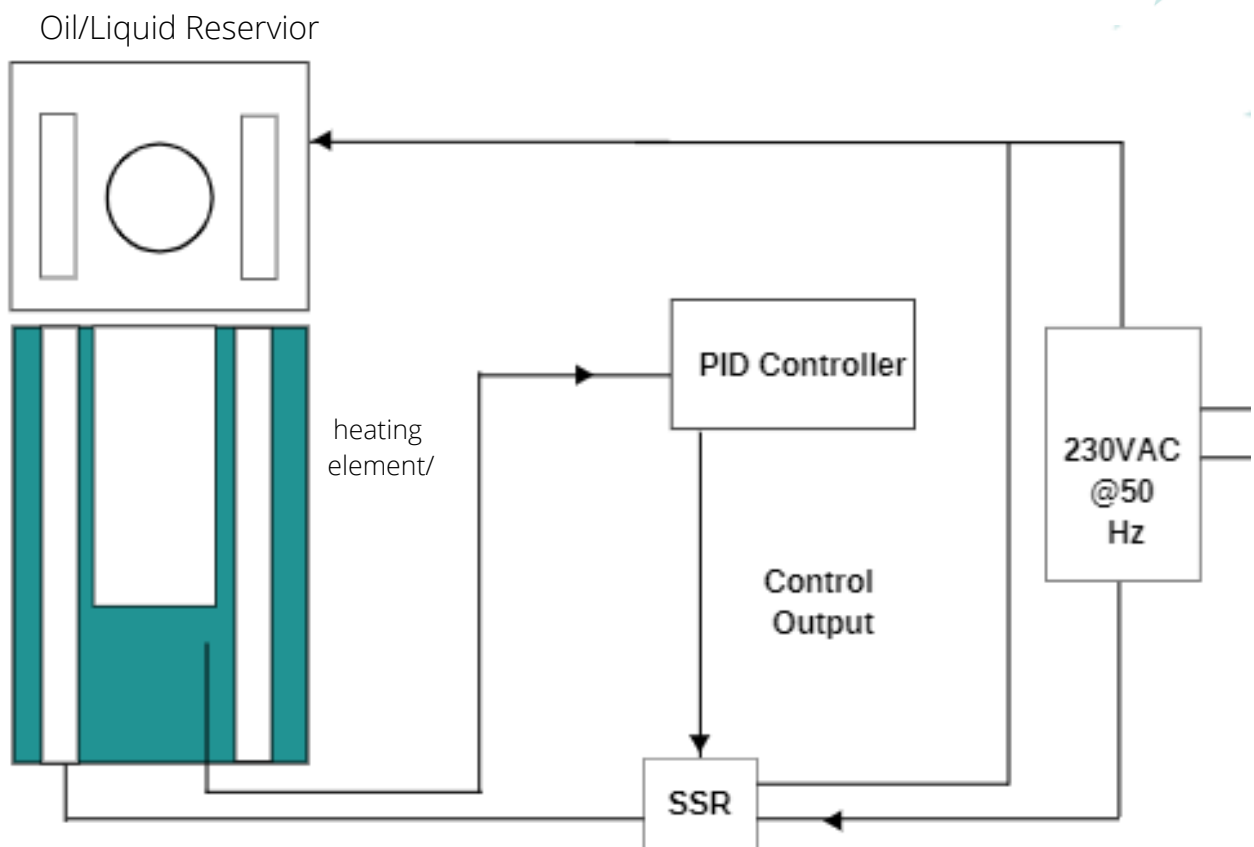
Operating Principle

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-25X 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 Thermo-electrica coil.
- Always maintain the liquid at the level below the Top cap.
- Ensure the stirrer in the Oil is on.
- You may Use the speed controller switch to control the speed of oil circulation.
- Too high speed may result in spillage at higher temperature and too low speed may result in higher non- uniformity.
- Always use correct platform to keep the instrument, Incorrect level may increase the vibrations.
- Never carry/transport the product with filled oil vessel.
- Never carry/transport the product when it is hot. Allow it to cool naturally by setting the minimum set point.
- Always use silicon oil(5 CST),
- never use any other oil.

All specifications are quoted at 25 Deg C, so it is highly recommended to maintain the ambient temperature 25 C or Below to have best performance.

Safety Measures & Precautions

- 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 100°C. Switch off the power immediately and consult factory.
- Do not temper wiring as it may be safety hazard.

Trouble Shooting

- 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.