



# Japsin Instrumentation

ISO 9001:2015 CERTIFIED ORGANIZATION



## TEMPERATURE CALIBRATION BATH OIL TYPE MODEL: TB-250



**Purpose:** "Ji" Temperature Calibration oil bath is used to obtain precise temperature for calibration of RTD's, (LIG) Liquid in Glass Thermometer, Thermocouples & PRTs, SPRTs.

Temperature Calibration baths are electric controllers which are in high reliability & accuracy in the measuring Temperature. Temperature Calibration Bath is particularly suitable for calibration of the widest range of Temperature Gauges or Instruments

### DESCRIPTION

The Test instrument TB – 250 consists of two single enclosures with stirrer. Front size 150 X 150 mm & 280 mm depth. They are connected with each other & equipped with a portable handle. The left enclosure contains a block with bore diameter of 70 mm & 140 mm depth which can reach from the top, face the reception of the test piece. In this block the heating cartridge & temperature sensor for the determination of the block temperature are installed / accesses from the bottom.

The right enclosure contains:

- 1) PID controller for control of the block temperature in which we can see the set value & present temperature of the block.
- 2) Power switches & power on indicator

### ADAPTER POCKETS:

It has to be made sure that the heat transmission resistance between the heating block & the test piece (thermometer, temperature sensor, temperature switch) is as low as possible. Therefore it is necessary to use exactly adapted pockets.

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## TECHNICAL DATA:

Regulation of the heating block PID regulator

Temperature Range Room temperature to 2 Deg C

Power Supply 230 V AC, 50 Hz.

Power consumption 1000 Watts

Accuracy +/- 0.5% | 0.25+/- | 0.1%

Oil to Use: Silicone oil or any higher temperature oil

## DIMENSIONS:

Weight of the instrument Approx. 8.5 Kg

- 1) Initially when the bath is connected to power supply it shall show the ambient temperature & later on could be taken to any temperature point from Ambient to 250 deg C thru the PID controller by heating or cooling with ON power supply.
- 2) Stability : 0.1 deg C
- 3) Accuracy : +/- 0.1 %
- 4) Heating time from ambient to 250 Deg C: 20 to 35 Minutes
- 5) Cooling time from 250 Deg C to Ambient : 20 to 35 Minutes
- 6) Instant cooling : Additional liquid methanol could be used in the well

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## OPERATING INSTRUCTIONS:

The test instrument TB – 250 is a portable unit for service / calibrating / testing purpose as well as for operating & laboratory tasks.

- 1) After switching on the mains power switch the PID controller shows the temperature of the block. (PV). Below that green colour LED shows the set value of the block (SV).
- 2) To adjust the set point, press key (2) then a dot LED blinks near the first digit, then using up key (3) & down key (4) set the 0 – 9 digit again push the (2) key to move the dot LED to the second digit using up & down key.
- 3) After setting the set point value press the set (1) key for setting the temperatures.
- 4) For auto tuning press (2) key for 2 seconds the 'At' from OFF to ON. Then press (1) key to active the auto tuning process, During auto tuning, the instrument executes on contr. After 2 cycles of ON – OFF action, the instrument will obtain the values of PID parameters.
- 5) If you want to escape from auto tuning status, press& hold key (2) for about 2 seconds until 'At' parameters appear again. Change 'At' from 'ON' to 'OFF' press (1) key to confirm, then the auto tuning process will be cancelled.
- 6) The PV shows continuously the temperature of the heating block. If the adjusted set temperature in the heating block is reached, the heating energy radiated from the block is dispensed by short switching on pulses of the heating cartridge, so the temperature inside the block is kept constant.
- 7) Cooling down the heating lock can be done quickly by switching ON the fan which produces higher amount of cooling air.

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