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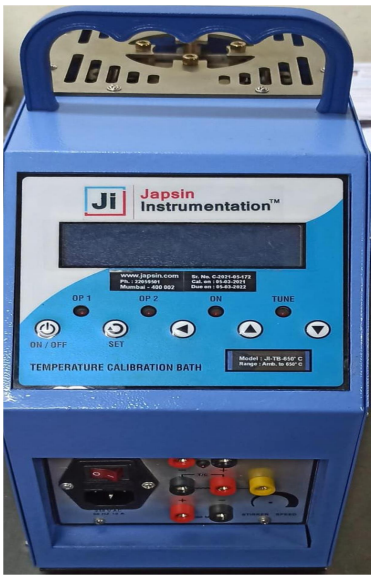
TEMPERATURE CALIBRATION BATH DRY BLOCK TYPE

MODEL: TB-850



Purpose: "Ji" Temperature Calibration bath is used to obtain precise temperature for calibration of 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 – 660 consists of two single enclosures. 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 18.5 mm & 110 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

3) Fan ON / OFF switch for cooling the block.

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 100 Deg C to 850 Deg C

Power Supply 230 V AC, 50 Hz.

Power consumption 1000 Watts

Accuracy +/- 0.5% / 0.2+/-

DIMENSIONS:

Block Bore ID 30.5 mm

Immersion length 120 mm

3 numbers of Adapter pockets of 30 mm OD are provided extra with the following sizes:

1) ID 10 mm, 6.6 mm, 5.1 mm & 3.1 mm ID (4 Holes)

2) ID 8.5 mm, 6.6 mm, 6.6 mm & 5.1 mm ID (4 Holes)

3) ID 4 mm, 6 mm, 8 mm 10 mm & ¼”

Size of the instrument 150 X 300 X 280 mm

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 100 to 850 deg C thru the PID controller by heating or cooling with ON power supply.
2) Stablility : 0.2 deg C
3) Accuracy : +/- 0.2 %
4) Heating time from ambient to 660 Deg C: 20 to 25 Minutes
5) Cooling time from 660 Deg C to Ambient : 15 to 20 Minutes
6) Instant cooling : Additional liquid methanol could be used in the well

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OPERATING INSTRUCTIONS:

The test instrument TB – 850 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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FUNCTION OF THE KEYS

There are five keys on the front display panel.

Key 1: On/Off switch:- Main function is to On/Off the heater coil & internal power supply. PID controller will be on always when you on the power switch with fuse in the second panel.

Key 2: SET Key:- Is used to set temperature. Press the set key and using up & down keys to change setting values & also changing the input type i.e Pt-100, K, J, R, S, B, Etc.

Key 3:- Shift Key:- Is used for shifting the number position 0-10 -100 -1000 & also used for auto tuning. For this press this key for 3 seconds it will display NO, then pressing the up key then if unit display yes then press set key again to enter it, then you can see one LED blinking. When the auto fuming is over the LED will be off & this process will take some time. DUE TO OFF THE INSTRUMENT WHILE AUTO TUNING.

Key 4: Up Key:- Is used for increasing values & scroll the inputs RTD, thermocouple, etc.

Key 5: Down key:- Is used for decreasing the values.

To go the above modes (RTD, thermocouple, switch test Etc). There is password (15).
For this press set key & up key simultaneously for 3 seconds. Enter password press set key. Scroll using set again to change modes. In this mode go to input -2 in this it will be disabled. If you want to measure RTD etc, press up key it will shift to enable. Again set.
You will get options RTD, thermocouple etc.
Using up key select it & press set key to enter the mode.

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SECOND PANEL

1) AC Input Socket.
2) Switch Test Port
3) T/c, RTD, mA, mV Port
4) 24 V DC Port

1) AC Input 240 V AC Amps Socket for accommodate AC, Computer Code (Add.Optional).

2) Switch Test Port: To see whether your temperature switches working on a particular Set Temperature. Suppose you have temperature switch or contacts NO, NC, take one wire from NC to connect to red port & one wire from No to black port. Suppose you want to check contact engages at 100 Deg C, when temperature reaches 100 Deg C the contacts if set properly it will engage & just below the port one RED LED is there, it will glow. For NC it will glow always when temperature reaches 100 Deg C glow will disappear. Likewise you can check all type of temperature switches, contacts Etc.

3) **Thermocouple, RTD, mA, mV Measurement:-** Press Set + Up key simultaneously for 3 seconds, put password (15) using up & down key. Press Set again, continue pressing scroll you can see input -2 disabled. Change to enable by using up key & press set key again then using up key select RTD, thermocouple, mA, mV, then press set key.
For this connect RTD, thermocouple in appropriate port shown in the panel. The value will be shown on the right side of the display.

4) 24 V DC Power Supply: For transmitter calibration you may need this power supply, no need to carry extra power supply with the given you can set it from the instrument itself.

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