

Title: Calibration Of R.S. Digital Thermometers

Scope

Work Instruction for the internal calibration of R.S. Digital Thermometers. To be used in the absence of a manufacturers calibration instruction.

Preparation

Calibration must be carried out using Category A Master instruments as required.

Equipment required;-

- 1.1 Datron 9100 Calibrator.
- 1.2 Glass Thermometer.
- 1.3 Haven OTB-7D Bath and Heater System.
- 1.4 Techne Fridge Unit.

Method

- 2.1 All calibration results must be entered on the results sheets (see appendix A).
- 2.2 Note the lab temp / relative humidity and enter on calibration results sheet.
- 2.3 Carry out test 1.
- 2.4 Carry out tests 2 to 9 using item 1.1.
- 2.5 Carry out tests 10 to 14 using items 1.2, 1.3 and 1.4.
- 2.6 Complete the results sheet header and enter Pass / Fail.

- All records must be kept for audit purposes

References

Appendix A Calibration Results for R.S. Digital Thermometers

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Appendix A

Calibration Results for R.S. Digital Thermometers

Model Serial No
Date Result
Lab Temp / RH Operator
User Location Certificate No

Accuracies quoted are from the manufacturer's specification or relevant British Standard.

Back Light Test

Test 1 When the UUT is switched on, press "on" switch again
Does the back light illuminate? Pass / Fail

Digital Thermometer : Instrument only

Accuracy specification: $\pm (0.3\% \text{ Rdg} + 1^{\circ} \text{ C})$

Test No	Simulator Equivalent Temperature $^{\circ} \text{ C}$	UUT Reading $^{\circ} \text{ C}$	Allowed Limits $^{\circ} \text{ C}$	Result
2	- 25		- 26 to - 23.9	Pass / Fail
3	- 3		- 4 to - 2	Pass / Fail
4	0		- 1 to + 1	Pass / Fail
5	3		2 to 4	Pass / Fail
6	8		7 to 9	Pass / Fail
7	63		61.8 to 64.1	Pass / Fail
8	100		98.7 to 101.3	Pass / Fail
9	199		197.4 to 200.6	Pass / Fail

Digital Thermometer and Probe

Accuracy specification : $\pm (0.3\% \text{ Rdg} + 1^{\circ} \text{ C} + 1.5^{\circ} \text{ C})$

Test No	Bath Temperature $^{\circ} \text{ C}$	Digital Thermometer and Probe Reading $^{\circ} \text{ C}$	Allowed Limits $^{\circ} \text{ C}$	Result
10	- 10		- 12.5 to - 7.4	Pass / Fail
11	- 5		- 7.5 to - 2.4	Pass / Fail
12	0		- 2.5 to + 2.5	Pass / Fail
13	25.0		22.4 to 27.5	Pass / Fail
14	50.0		47.3 to 52.6	Pass / Fail

The UUT was calibrated using the following equipment:

1. Datron 9100 Calibrator S/N _____
2. Glass Thermometer S/N _____
3. Haven OTB-7D Bath and Heater System S/N _____
4. Techne Fridge Unit S/N _____

The uncertainty of measurement is estimated not to exceed:

Temperature: $\pm 0.5\%$

The uncertainty limits quoted refer to the applied values only and do not relate to the stability of the UUT.