HIGH PRECISION SUB ZERO
DRY BLOCK TEMPERATURE CALIBRATOR

MODEL : TCAL 1503 / - 35

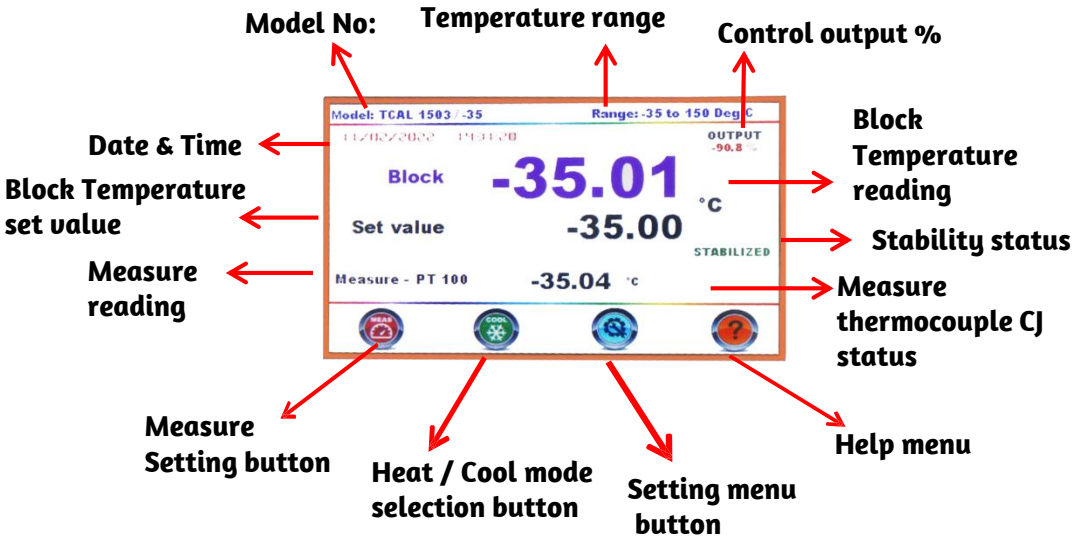
Introduction

Sansel model TCAL 1503/-35 is a Metrology grade Dry Block Temperature Calibrator incorporate Solid-state, Heating and Cooling Technology. This dry well has an advantage of wide temperature range from -35 to 120°C, CFC Free, high efficiency, Fast cooling & Heating, Energy saving & Fluid free. Hence it is a great alternative to Fluidized bath and best suitable for clean room environment.

This Portable Dry Block Calibrator is a high precision, more resolution, better stability, Uniformity, big well dia and depth to calibrate more number of temperature sensors at a time. This model can meet any calibration requirement in laboratories or in Onsite applications. It has inbuilt measuring facility of thermocouples, RTD, Resistance, millivolts, Volts, ohms & milliamps to directly read the signals from most of the temperature sensors, indicator with sensors and transmitters.

This Dry well calibrator model is using 4.3" True colour display with touch screen, easy to read multi parameter at the same time like, Block temperature, Set temperature, Measure value, real time clock with date & time , Control output %, Stability time & Status, Range of the equipment with necessary unit of measurement and three Touch panel keys are used for measure Configuration, Settings, Calibration etc.,. It has one more advantage of help menu for operating instruction of the equipment via the same display screen, Hence no need of hard copy of Instruction manual.

DISPLAY FEATURES



Applications

- Bio-Technology
- Food Industries
- Medical
- Pharmaceutical
- Calibration Laboratories

Features

- ✓ 4.3 inch True colour TFT DISPLAY with touch screen
- ✓ Wide temperature Range from -35 to 120°C
- ✓ Resolution 0.01 °C
- ✓ Metrology level performance
- ✓ Improved radial & axial uniformity up to 40mm height
- ✓ Meet the EURAMET Cg-13 requirement
- ✓ Stabilization time & status indication provided
- ✓ Fast heating & cooling
- ✓ Quick settling , Portable & Rugged
- ✓ Solid state heating and cooling technology
- ✓ Interchangeable 30mm dia x 150mm length insert to suit different diameter of sensor
- ✓ Inbuilt DUC measurement facility RTD, TC, mV, V, mA & ohms
- ✓ Light weight – less than 16kg
- ✓ Easy onsite carriable
- ✓ Low power consumption – less than 500W
- ✓ ISO/IEC 17025 Accredited calibration certificate
- ✓ Optional PC Interface with automatic calibration software

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Technical Specifications

Model	TCAL 1503 / -35		
Display	4.3 inch True TFT Display with Touch screen		
Temperature Readout	°C / °F (selectable)		
Temperature Range	-35 to 120°C @23°C Ambient		
Resolution	0.01°C		
Block Stability	Better than ± 0.03°C at full range		
Block Radial uniformity	± 0.02°C at full range		
Block Axial uniformity (upto 40mm)	± 0.20°C at -35°C ± 0.05°C at 0°C ± 0.05°C at 50°C ± 0.17°C at 100°C		
Loading effect	Better than ± 0.08°C		
hysteresis	Better than ± 0.03°C		
Heating time	25 mins (25 to 120 °C) 75 mins (-35 to 120 °C) 52 mins (-35 to 25 °C)		
Cooling time	25 mins (25 to -35 °C) 15 mins (25 to -30 °C) 65 mins (120 to 25 °C)		
Stabilization Time	10 minutes		
Insert (Dia. x Height)	30mm x 160mm		
Test sensor immersion depth	155 mm		
Standard well holes in mm	Insert No. 1 →5.1, 6.2, 6.2 & 8.1, Insert No. 2 →6.2, 6.2 & 10.2		
Measure inputs	RTD-PT 100, PT 1000 / TC - J, K, R, S, T, E, B , N , Analog – mA, V, mV, ohms		
Measure (Range, Resolution, Accuracy)	Range	Resolution	Accuracy
mV-	0 to 75mV	0.001	±(0.025%rdg +2µV)
V-	0 to 10V	0.0001	±(0.025%rdg +0.1mV)
mA-	0 to 25mA	0.0001	±(0.025%rdg +2µA)
Ohms-	0 to 4000Ω	0.01	±(0.025%rdg +0.05Ω)
PT 100-	-200 to 800°C	0.01	±(0.025%rdg +0.1°C)
PT 1000-	-200 to 630°C	0.01	±(0.025%rdg +0.1°C)
J-	-200 to 1200°C	0.1	±(0.025%rdg +0.1°C)
K-	-200 to 1370°C	0.1	±(0.025%rdg +0.1°C)
R-	0 to 1760°C	0.1	±(0.025%rdg +0.3°C)
S-	0 to 1760°C	0.1	±(0.025%rdg +0.3°C)
N-	-200 to 1200°C	0.1	±(0.025%rdg +0.1°C)
B-	600 to 1800°C	0.1	±(0.025%rdg +0.3°C)
T-	-200 to 400°C	0.1	±(0.025%rdg +0.1°C)
E-	-200 to 1000°C	0.1	±(0.025%rdg +0.1°C)

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Cold junction Accuracy	± 0.3°C
UUC Sensor supply input	24V DC ± 10% / 50mA max.
Power supply	230V AC ± 10% / 50Hz (optional 110V AC)
Power Consumption	500 VA
Switch test	Provided
Overall Dimension in mm	390 x 185 x 356 (L x B x H) (Approx.)
Weight	17.3 kg (with well insert) (Approx.)

Note: Due to continuous product improvements, Published specifications may change with out notice.

SANSELSOFT Calibration software (optional)

Optional fully automatic documentation calibration software "SANSELSOFT" is provided with TCAL 1503 / -35 to calibrate different variety of UUC automatically from your PC or Laptop and generate the calibration report with exact results without your presence always near TCAL 1503 / -35 , will save your time to concentrate in various jobs. The SANSELSOFT calibration software having easy following steps makes your calibration easy , effective & time saver.

Step 1
- Create tag of Device / Unit under calibration (DUC/ UUC)
- Select tag of Device / Unit under calibration (DUC/ UUC) (if already tag created)

Step 2
- Specify calibration procedure

Step 3
- Select source calibration
- Select measurement calibration (if different measurement equipment available)

Step 4
- Select mode of calibration
- Select mode of Measurement (if different measurement equipment available)

Step 5
- Initialize source / Measurement Calibrators

Step 6
- Perform calibration

Step 7
- Specify Report number, Conclusion & Remarks

Step 8
- Print / Export Report

SANSELSOFT designed for perform calibration on field instruments with the use of standards and software communication. This software designed in the way, user can easily perform calibration. SANSELSOFT has powerful database support to maintain complete track records of each device calibration for long time. SANSELSOFT supports communication interface standards RS 232 or USB and provides facility to add new standard/DUC instrument library. SANSELSOFT can be adopted for various types of instruments like electronic, electrical, temperature, pressure and optical measurement devices. SANSELSOFT increases Standard's Life-time by eliminating key operations and saves maintenance cost.

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Standard Delivery

1. Basic Instrument
2. Instruction Manual
3. Mains Card
4. Spare Fuses
5. Well tool
6. Standard well insert – 2 nos

Optional

1. Master Indicator with sensor
2. Additional well insert
3. Carrying case
4. ISO/IEC 17025 Accredited calibration certificate

Carrying case

SANSEL INSTRUMENTS AND CONTROLS

SANSEL CALIBRATION LABORATORIES

ISO/IEC 17025 Accredited Calibration Laboratory by NABL CC - 2879

(Thermal, Mechanical, Electro-Technical, Dimension Parameters)

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