English

Statement of Accuracy

ACCREDITED
Calibration
Cert.#2448.01

FRIO-**Temp**® Digital Thermometer

Serial Number: _____ Calibration Date: _____

This is to confirm the thermometer bearing the serial number above was compared with standards traceable to the National Institute of Standards and Technology (NIST) and Deutscher Kalibrierdienst (DKD/PTB). Accuracy for this thermometer is ±0.5°C from -20 to +70°C, ±1°C from -50 to -20 and 70 to 150°C, and ±2°C from 150 to 300°C.

The Standard Serial Number is based on the range of the thermometer. The Standard Serial Numbers calibrated by NIST and DKD/PTB are as follows:

#7713700 (NIST), #728 (DKD/PTB) for ranges below -30°C
#844016 (NIST), #730 (DKD/PTB) for ranges from -30° to 10°C
#878708 (NIST), #733 (DKD/PTB) for ranges from 0° to 50°C
#9810984(NIST), #735 (DKD/PTB) for ranges from 50° to 100°C
#905354 (NIST), #736 (DKD/PTB) for ranges from 100° to 150°C
#878735 (NIST), #739 (DKD/PTB) for ranges from 150° to 200°C

H-B Instrument Company's laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 through A2LA. H-B's laboratory also meets the requirements of ANSI/NCSL Z540-1-1994.

The expanded measurement uncertainties associated with our calibration system are ±0.073°C from -80 to -1°C, ±0.064°C at the ice point in melting ice bath, ±0.066°C from 1 to 100°C, ±0.066°C from 101 to 200°C, ±0.068°C from 201 to 300°C, and ±0.064°C from 301 to 400°C. These uncertainties have been calculated using our Work Instruction WI-19 to 22 that utilizes methods found in NIST Technical Note 1297. The reported uncertainty represents an expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2.

Richard Jackson, Production Manager
H-B Instrument Company

ISO 9001:2000 Registered

Instructions for your FRIO-**Temp**® Digital Thermometer

Installation:
Pull down the battery cover, pull out the insulation strip in the battery compartment, and close the battery compartment. Place the probe in the glass bottle with glass beads, place bottle with probe in test condition, record your reading when the reading becomes stable.

°C/°F Exchange:
Press the [°C/°F] once.

Maximum/Minimum Memory:
Press [MAX/MIN] once to display the maximum reading and a MAX symbol will flash. Press [MAX/MIN] once more to show the minimum reading and a MIN symbol will flash. Press [MAX/MIN] again to return to normal display. Press [MAX/MIN] and [ON/OFF] simultaneously to clear the memory.

Data Hold:
Press [HOLD] once to retain the display reading and the unit symbol will flash. Press [HOLD] again to return to normal display.

Power On/Off:
Press [ON/OFF] once.

Note:
1. Bottle and cap cannot exceed 250°C (482°F).
2. The thermometer cannot be powered off until all functions are released.
3. If the display becomes dim, replace the battery with same type of battery.
4. After each measurement, clean the probe immediately to avoid cross contamination.
5. Do not put the digital display thermometer unit inside the freezer, refrigerator, incubator or oven.

Instructions for your FRIO-**Temp**® Digital Thermometer with Timer

Installation:
Pull down the battery cover, pull out the insulation strip in the battery compartment, and close the battery compartment. As soon as the battery is installed, the thermometer will perform a self-test with all display segments switched on for about 2 seconds and then the normal temperature will be displayed. Place the probe in the glass bottle with glass beads, place bottle with probe in test condition, record your reading when the reading becomes stable.

°C/°F Exchange:
Press [°C/°F] once.

Temperature Alarm Setting:
Press [SET] once and the high limit value (HI) will flash. Use [UP] and [DOWN] to set the desired alarm high limit. Press [SET] once more and the low limit value (LO) will flash. Use [UP] and [DOWN] to set the desired alarm low limit. Press [SET] again to finish the setting. During limit setting, holding down [UP] or [DOWN] will advance the value automatically and pressing [UP] and [DOWN] simultaneously will toggle the limit on or off. If the temperature value is out of the set limit then the alarm will sound. Pressing any button will stop the alarm sound but the HI or LO icon will keep flashing until the temperature is within the set limit.

Maximum/Minimum Memory:
Press [MAX/MIN] once to display the maximum reading and a MAX icon will flash. Press [MAX/MIN] once more to show the minimum reading and a MIN icon will flash. Press [MAX/MIN] again to return to normal display. To clear the temperature memory, press and hold [SET] for 3 seconds then release.