

## **How to Re-Calibrate a K-Type Temperature Sensor on a Digital Manifold in the Field (99103-A & 99903)**

### **PRE-REQUISITE:**

The PREAMBLE, which describes, “HOW TO RE-CALIBRATE THE MANIFOLD” has been read and understood. This preamble describes the meaning and purpose of every step and the requirement of recording the existing digital parameters for each of the 16 steps before proceeding with the re-calibration process.

### **REQUIREMENTS:**

1. A stable temperature reference.
2. A calibrated digital or analog temperature instrument.
3. In the event such temperature sources or instruments are not available, a suitable alternative can be a mixture of ice and water. In that event, the temperature reference WILL NOT BE EXACT. Stirring the ice-water combination can generate a “reference temperature” in the 33 to 34 degrees Fahrenheit region for a short period of time.

### **STARTING THE TEMPERATURE SENSOR RE-CALIBRATION PROCESS:**

*This procedure is for re-calibrating the HIGH side of a new K-type thermocouple temperature sensor.*

1. Connect the temperature sensor to the HIGH side of the manifold.
2. Press the POWER button to turn the unit ON.
3. Enter the CALIBRATION MODE, as described in the Pre-Requisite section above.
4. Press the ENTER button until you reach step #9 (lower right hand quadrant on the LCD display shall display a number 9).
5. Using one of the temperature sources, or another external temperature measuring instrument as mentioned in the REQUIREMENTS section above, clamp the new thermocouple sensor to the known temperature source. If the water-ice mixture is used, insert the thermocouple into the slurry and stir or agitate the mixture to keep the temperature stable and uniform. While doing this, use the UP or DOWN arrows on the keypad until the temperature displayed in the lower left hand quadrant is in the 33 to 34 degrees Fahrenheit range. Record the 3-digit number in the top center of the LCD.
6. If a known temperature source is used or an external calibrated temperature measurement source is used, adjust the UP and DOWN arrows until the lower left quadrant of the LCD matches these external references.

7. Press ENTER one more time to get into step #10 of the calibration process. The number in the top center of the display should be 423. Do not change that number.
8. Press ENTER repeatedly until you go past step #16.
9. You have completed the re-calibration of the temperature sensor for the HIGH side of the digital manifold.

*This procedure is for re-calibrating the LOW side of a new K-Type thermocouple temperature sensor.*

1. Connect the temperature sensor to the LOW side of the manifold.
2. Press the POWER button and turn the unit ON.
3. Enter the CALIBRATION MODE, as described in the Pre-Requisite section above.
4. Press the ENTER button until you reach step #11 (lower right hand quadrant on the LCD shall display a number 11).
5. Using one of the temperature sources or another external temperature measuring instrument as mentioned in the REQUIREMENTS section above; clamp the new thermocouple sensor to the known temperature source. If the water-ice mixture is used, insert the thermocouple into the slurry and stir or agitate the mixture to keep the temperature stable and uniform. While doing this, use the UP or DOWN arrows on the keypad until the temperature displayed in the lower left hand quadrant is in the 33 to 34 degrees Fahrenheit range. Record the 3-digit number in the top center of the LCD.
6. If a known temperature source is used or an external calibrated temperature measurement source is used, adjust the UP and DOWN arrows until the lower left quadrant of the LCD matches these external references.
7. Press ENTER one more time to get into step #12 of the calibration process. The number in the top center of the display should be 423. Do not change that number.
8. Press ENTER repeatedly until you go past step #16.
9. You have completed the re-calibration of the temperature sensor for the LOW side of the digital manifold.