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AutoTemp Temperature Calibration

P/N 70-9037
November 2010
Revision C

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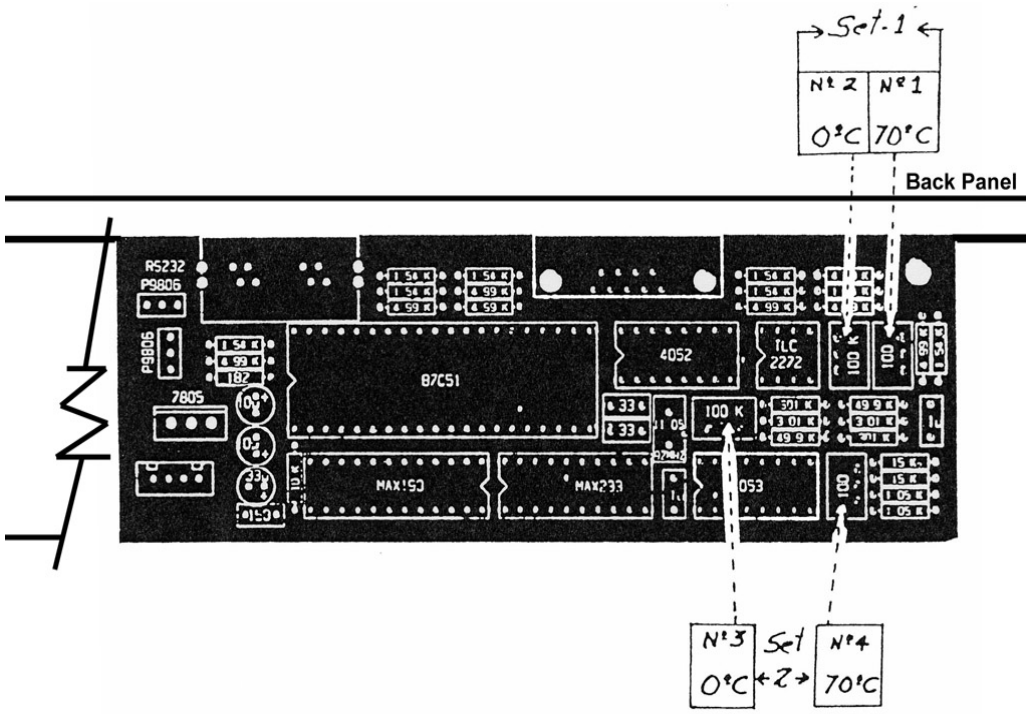
AutoTemp Manifold Channels

The AutoTemp box supports eight temperature channels. Channels 1 through 4 share two pots to make up one calibration set. Channels 5 through 8 share two more pots to make a second calibration set.

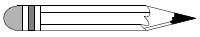
FIGURE 1. AutoTemp Channels, Pots and Sets



Two-point Calibration

Two standard resistors are needed for two-point calibration:

- 394.5 ohm for 70.0 °C
- 1355 ohm for 37.0 °C
- 7355 ohm for 0.0 °C



Note

To calibrate Set 1, plug both resistors into # 1 and # 4 or # 2 and # 3. To calibrate Set 2, plug both resistors into # 5 and # 8 or # 6 and # 7.

Complete the following steps:

Step 1. Turn on the dissolution tester.

Step 2. Ensure the baud rate is set at 9600 by pressing **MENU** > **4** > **6** > **ENTER** > **4** in sequence.

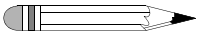
Step 3. Lower the drive unit to the full down position.

Step 4. Turn off power to the instrument and remove the power cord.

Step 5. Remove the white plastic caps over the screws that secure the top cover. Remove the white plastic caps over each of the center screws in the side panels.

Step 6. Remove the eight Phillips-head screws that are exposed when you remove the snap caps.

Step 7. Disconnect the limit switch on the left back corner. For the VK 7010, also disconnect the DDM cable on the main PCB as well as the power cables from the DDM power supply.



Note

Be sure to replace these connectors when you reassemble the tester.

Step 8. Lift the top cover and secure it to the underside of the top plate with clamps.

Step 9. Replace the power cord and turn on the instrument.

Warning

Exercise extreme caution while performing the calibration with power flowing to the interior circuitry. Electric shock can occur.

Step 10. Use the two calibration resistors to check the # 1 and # 4 positions.

Step 11. Lower the sample manifold. The temperatures display on the system monitor screen of the dissolution tester.

Step 12. For positions 1 through 4, adjust pot number 1 to reach 70.0 °C. For positions 5 through 8, adjust pot number 4 to reach 70.0 °C.

Step 13. For positions 1 through 4, adjust pot number 2 to reach 0.0 °C. For positions 5 through 8, adjust pot number 3 to reach 0.0 °C.

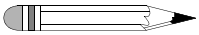
Step 14. Switch the position of the calibration plugs and verify the readings remain the same. If the readings change, adjust the appropriate pot.

Step 15. Repeat steps 11 - 13 if necessary.

Step 16. Change the two resistors to positions 5 and 8.

Step 17. Repeat steps 11 - 14.

Step 18. Verify the calibration using the 37.0 degree resistor plug.



Note

The temperature circuit activates only after the temperatures reach 30 °C.

Temperature Measurement System Operation Overview

This system uses 9600 baud rate to transmit the reading to the dissolution tester. Press **MENU** > **4** > **6** > **ENTER** to ensure the same baud rate has been selected on the dissolution tester.

The reading displays on the dissolution tester only when the sampling manifold is lowered and the temperature reading of at least one vessel is over 30 °C.

If the reading displays on the dissolution tester for more than 15 seconds when the manifold is raised or the box stops reading (due to the dissolution tester being turned off or if none of the vessels are over 30 °C, etc.), then the last vessel temperature reading is printed out (if the printer is enabled).

The external RS232 communication with the dissolution tester can be linked via the 25-pin connector on the side of the box. When no measurement takes place, the communication port links straight to the dissolution tester. If the reading is in process, the communication port is interrupted every 1.5 seconds and loses 0.03 seconds. This will occasionally block a command if both appear at the same time.

Water Bath Temperature Calibration

Two standard resistors are needed for two-point calibration:

- 394.5 ohm for 70.0 °C
- 1355 ohm for 37.0 °C
- 7355 ohm for 0.0 °C

Complete the following steps:

Step 1. Plug the resistors into the BATH TEMP and VESSEL TEMP jacks on the back panel of the dissolution tester (no order is required).

Step 2. Turn on the dissolution tester.

Step 3. Press and hold **CLEAR** and then press **8**. The Mode Selection screen displays.

Step 4. Press **2** to enable the vessel temperature measurement.

Step 5. Press the following keys in sequence: **MENU** > **3** > **2** > **ENTER** > **2**. The Set Vessel Temp screen displays the actual bath and vessel temperatures to the nearest 0.01 °C.

Step 6. Locate the 100 ohm pot (near IC 4584) and 100 K ohm pot (near IC LMC 6082) on the main PCB.

Step 7. Adjust the 100 ohm pot to reach 70.00 ± 0.02 °C.

Step 8. Adjust the 100 K ohm pot to reach 0.00 ± 0.02 °C.

Step 9. Repeat steps 7 and 8 if necessary.

Step 10. Verify the calibration using the 37.0 degree resistor plug.

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