



PPMS Service Note 1070-304

## Testing the Neck and Block Drivers

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This procedure tests the operation of the drivers that control the PPMS insert Neck and Block heaters. In this procedure you will manually set a current on each driver and verify that the chamber is warming and delivering the current to the heaters.

### To Test the Neck and Block Drivers

1. Place the system in standby mode by pressing **Control/1. Interactive Control/8. Shutdown Mode** on the Model 6000 front panel.
2. Check the system temperature displayed on the Model 6000 front panel. Record the System Temperature here: \_\_\_\_\_
3. Open the Diagnostic Settings menu by pressing **Config/5. Software/3. Diagnostics**.
4. Enable the system diagnostics by using the **Incr** key to toggle to **Enable**.
5. Press **Alt + Enter** to execute this command.
6. Enter the **Set Driver Outputs** screen by pressing **Control/3. Immediate/8. DrvOut**.
7. Select **Channel 3** by pressing the INCR key. This channel corresponds to the Block Heater.

**Note:** If you are unable to select Channels 3 and 4, repeat steps 3 and 4.

8. Set the **Current** to 500 Amps (it will set to 499.9). Placing the cursor in front of the Current field on the screen and keying in 500 using the number keypad and pressing Enter does this. The value 499.99 will appear next to the **Current** field when this is done.
9. Press **Alt + Enter** to execute this command.
10. Press the **Status** key twice to display the **Status-System Cont** screen.
11. Record the value for Driver Channel 3 current: \_\_\_\_\_. It should read 499.9 Amps.
12. Press **Status** twice to display the system temperature. The temperature should be increasing as a result of this driver being on.
13. Return to the **Set Driver Outputs** screen by repeating step 6.
14. Set the Channel 3 current to zero and press **Alt + Enter**.

15. Repeat steps 8 through 12 for **Channel 4**, setting the current to 750 rather than 500. The neck heater is further from the thermometers so a higher current is needed, and the temperature change will be slower. Allow about 3 to 5 minutes for the temperature change to be observed.
16. Driver Channel 4 Displayed Current: \_\_\_\_\_
17. Driver Channel 4 Temp Increased?: \_\_\_\_\_
18. Return to the **Diagnostics** screen and disable the System Diagnostics by repeating steps 3 and 4 and selecting **Disable**.

## Results

- If the temperature did not rise during this test, the system drivers or heaters may be malfunctioning. Refer to PPMS Service Note 1070-305 to verify that the heaters are functioning. If the heater resistances are acceptable, the system drivers may need to be replaced. In that case, please contact your Quantum Design Service Center.
- If the driver channel output currents did not match the values you entered (e.g. 500 and 750 Amps), there may be a problem with the driver outputs or the bridge channel. Please contact your Quantum Design Service Center.