

# IMPLANT ZERO PRESSURE OFFSET

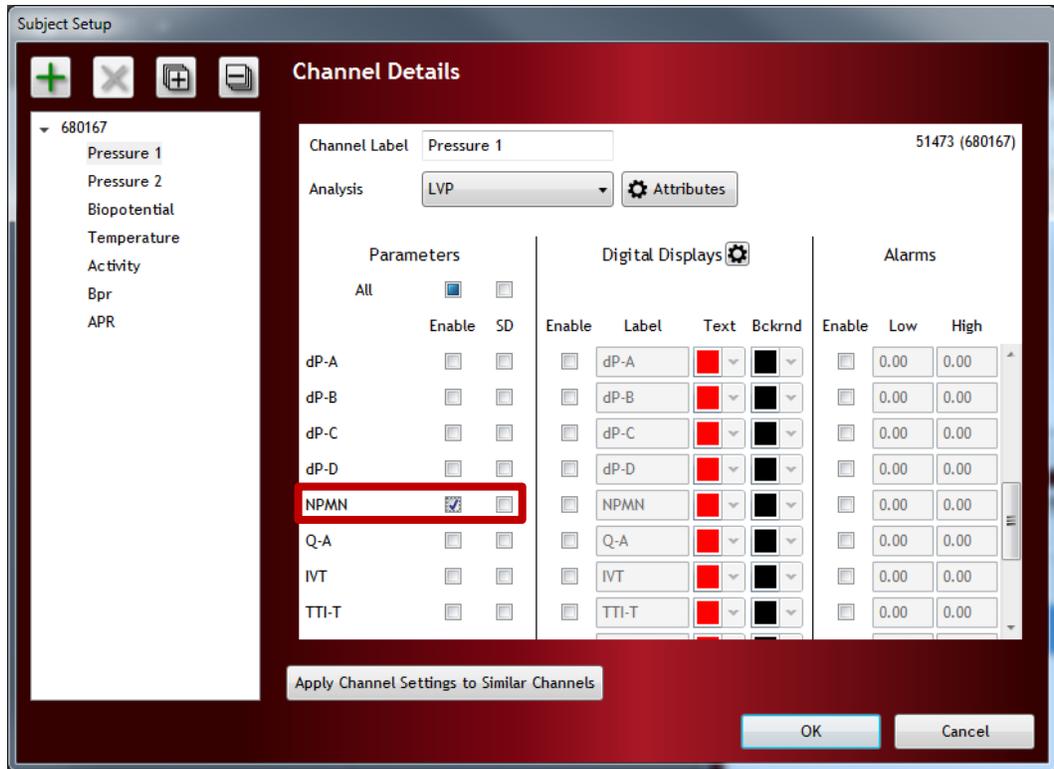
All DSI implants are carefully calibrated and tested before being shipped to the researcher. However, we strongly recommend that all pressure devices be checked again before surgery and after explant. By checking the zero offset before implantation and after explantation, you can be confident that the data being collected are true and accurate. The following procedure will allow you to verify that the implant is functioning normally prior to surgical placement in an animal.

## Notes:

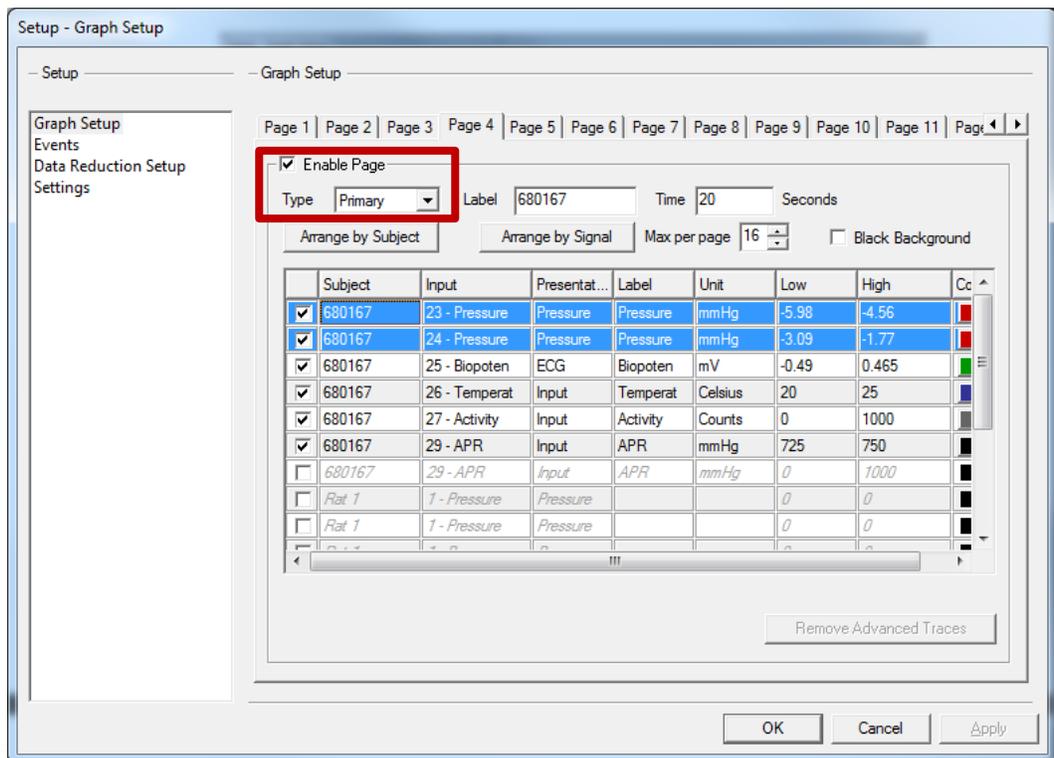
- Please see the Implant Specifications page of the DSI webpage to determine the initial pressure accuracy for your implants.
- It is important that ambient pressure reference (APR-2) is connected and configured prior to checking the zero offset. (See Hardware Configuration).
- It is very important that the catheter tip(s) be level with the implant body. If the catheters are above or below the level of the implant body, the measured values will be affected by hydrostatic pressure and will not be accurate. Checking the implant while still in its sterile package will help to ensure the catheter is in proper position for the zero offset check.
- Do not immerse the implant into liquid or place in a sealed container during this test as it will also cause “head pressure.”

## CHECKING ACCURACY BEFORE IMPLANTATION

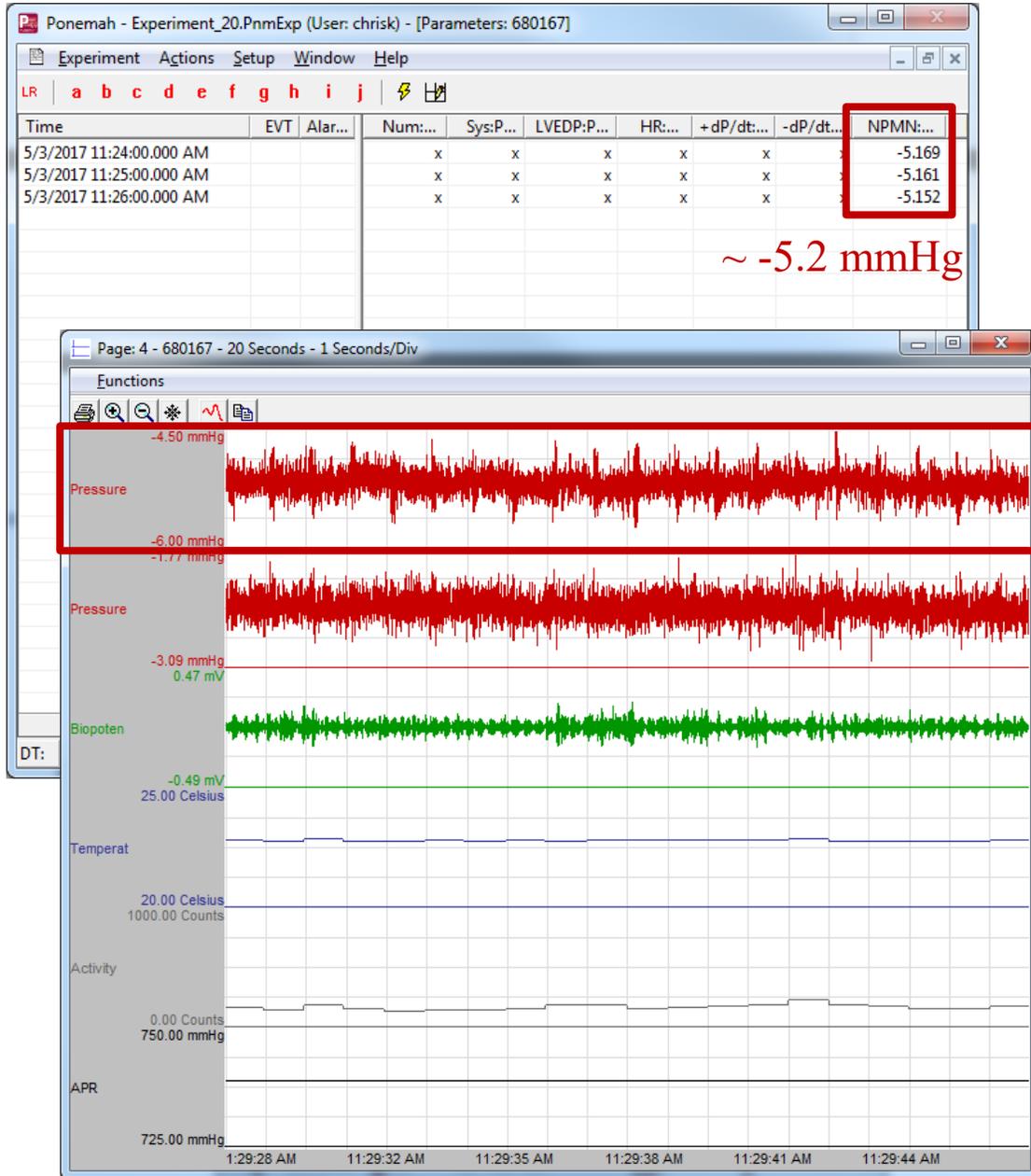
1. Activate the devices and ensure each implant is setup and assigned to a CLC (PhysioTel Digital) or MX2 (PhysioTel and PhysioTel HD).
  - a. For PhysioTel Digital, please see the *Edit PhysioTel Digital (CLC) Configuration* section of the Ponemah User Manual.
  - b. For PhysioTel and PhysioTel HD, please see the *Edit PhysioTel/HD (MX2) Configuration* section of the Ponemah User Manual.
2. In Ponemah, setup the Experiment as described in the **Creating a New Experiment** section of the Ponemah User Manual.
  - a. For the Blood Pressure (BP) and/or Left Ventricular Pressure (LVP) channels, add the Non-Pulsatile Mean (NPMN) derived parameter within the **Subject Setup** dialog's **Channel Details**.



- b. Setup a **Primary** graph page for the LVP and/or BP Input Channel from the **Experiment Setup** dialog.

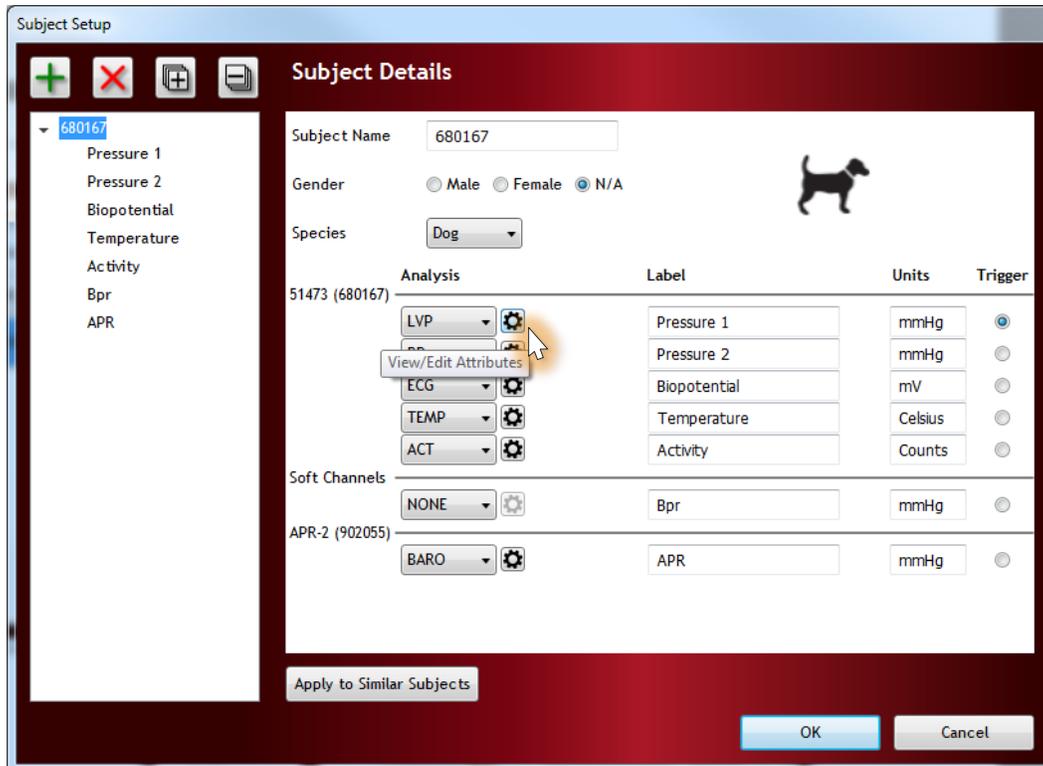


3. Start an acquisition. After a few minutes of collection, assess the NPNM values for the BP and/or LVP channel(s). This is your offset. You may use the Primary Graph(s) to view the real-time recording of the pressure signal to verify it is stable.

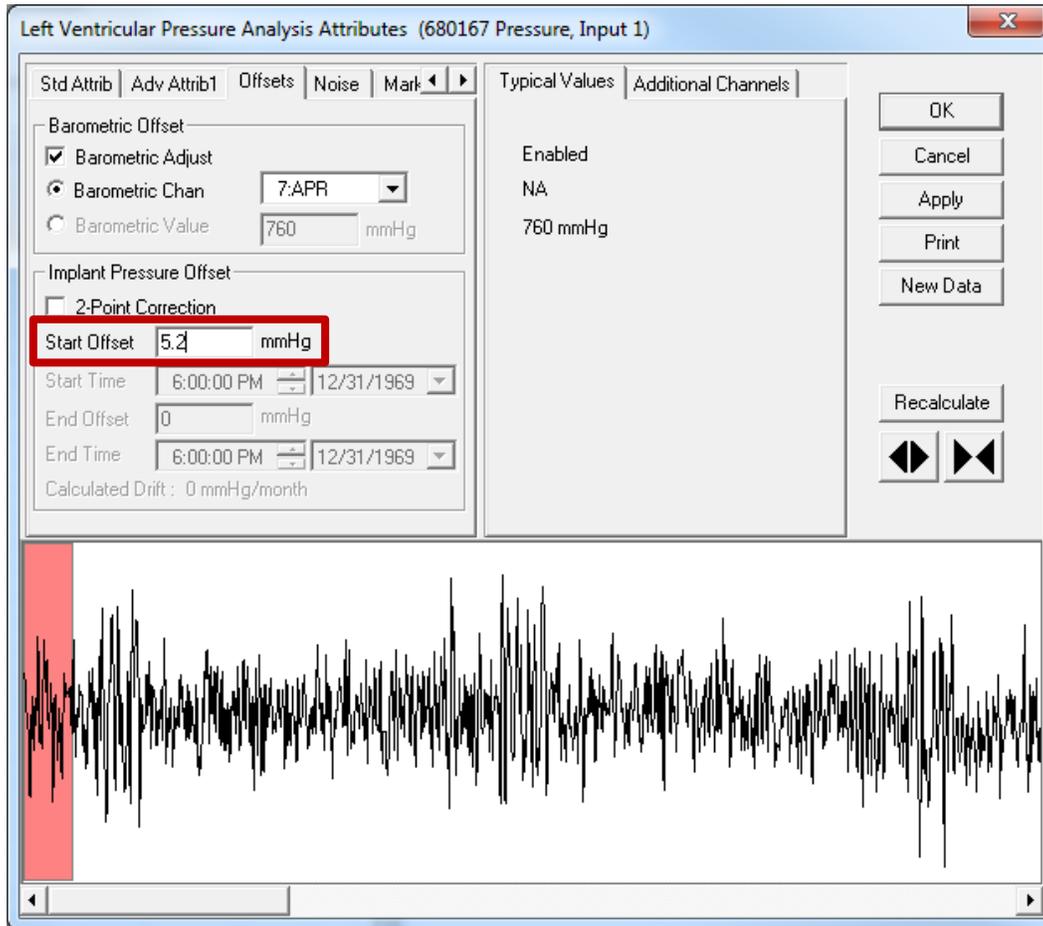


## HOW TO ENTER AN OFFSET

1. While running the offset acquisition, navigate to the **Sampling Control All** tab. Double-click on the Subject whose offset you will be entering. Select the  icon associated with the **Blood Pressure Input Channel** and/or **LVP Input Channel** to bring up the **Analysis Attributes** dialog.



2. Select the **Offsets** tab. At the bottom, located the Offset text box. Enter the value obtained from the NPMN parameter (Step 3 above).

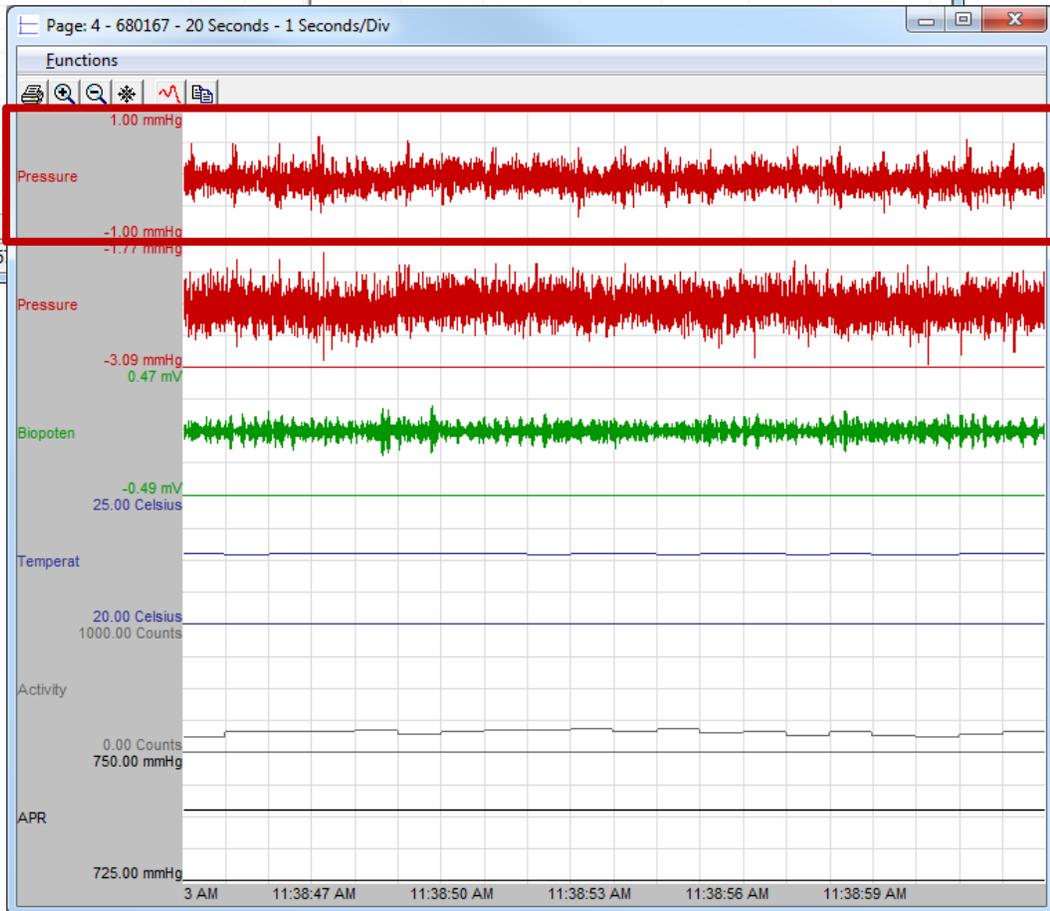


*Note:* For the LVP (above) and the BP (not pictured) analysis modules, a negative offset will be corrected by entering a positive value into the Start Offset text box. Example: If the signal is -5.2 mmHg below baseline; enter 5.2 in the text box. A positive offset, therefore, will be corrected by entering a negative value into the Start Offset text box. Example: If the signal is +3.1 mmHg above baseline; enter -3.1 in the text box.

- 3. Check the **NPMN** values after entering the offset to ensure the new value are approximately 0 mmHg. Notice, the signal on the Primary Graph will also reflect the update (may need to auto scale the channel).

Time	EVT	Alar...	Num:...	Sys:P...	LVEDP:P...	HR:...	+dP/dt:...	-dP/dt:...	NPMN:...
5/3/2017 11:24:00.000 AM			x	x	x	x	x	x	-5.169
5/3/2017 11:25:00.000 AM			x	x	x	x	x	x	-5.161
5/3/2017 11:26:00.000 AM			x	x	x	x	x	x	-5.152
5/3/2017 11:27:00.000 AM			x	x	x	x	x	x	-5.176
5/3/2017 11:28:00.000 AM			x	x	x	x	x	x	-5.182
5/3/2017 11:29:00.000 AM			x	x	x	x	x	x	-5.176
5/3/2017 11:30:00.000 AM			x	x	x	x	x	x	-5.174
5/3/2017 11:31:00.000 AM			x	x	x	x	x	x	-5.179
5/3/2017 11:32:00.000 AM			x	x	x	x	x	x	0.0019
5/3/2017 11:33:00.000 AM			x	x	x	x	x	x	-0.005
5/3/2017 11:34:00.000 AM			x	x	x	x	x	x	0.0039

~ 0.0 mmHg



4. Repeat steps 1-3 from the How to Enter an Offset section for any additional pressure channels.

*Note: The 2-point correction checkbox permits the definition of an offset value at the date and time prior to implant and another offset value at the date and time once explanted to apply a linear pressure drift correction over the duration, if desired.*

Please contact DSI Technical Support with any questions regarding when and how to take a zero pressure offset.