

## Motion Detector Calibration

- Please do not remove this sheet from the table.
- Follow these instructions only if you open a Logger Pro file which involves measuring distances using a motion detector.
- You need to follow this calibration procedure before you start the experiment.

1.1 You are probably aware that the motion detector detects the position of a target by sending and receiving sound pulses. To guarantee that the motion detector measures the correct distance one needs to calibrate it.

1.2 Calibration is done by communicating to the motion detector the speed of sound in the room. It turns out that the speed of sound depends on the temperature of the room. Thus, in order for the motion detector to correctly determine the speed of sound one needs to communicate to the motion detector the temperature of the room.

1.3 Follow the instructions below to calibrate the motion detector.

1.3.1 Open the Logger Pro file that you will be working with. **Remember, the calibration needs to be done only if the file uses a motion detector.**

1.3.2 Make sure a motion detector is connected to the port labeled **DIG 1** of the *LabQuest* interface box.

1.3.3 On the Logger Pro main window, click on the *LabQuest* **Set Up Sensors** icon. See Figure 1.

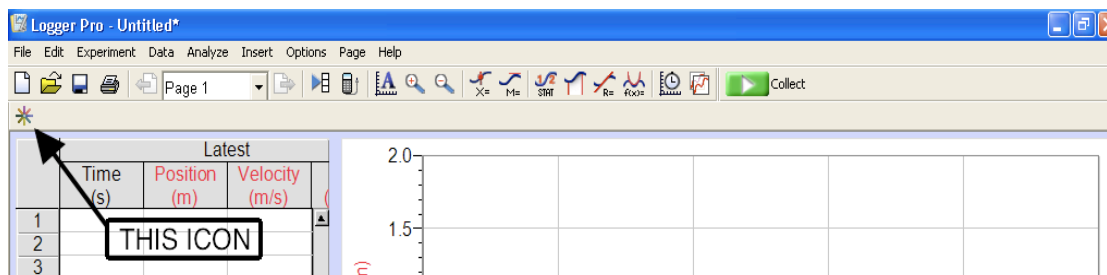


Figure 1

1.3.4 In the window that pops open make sure that the motion detector shows up as the sensor connected to **DIG/SONIC1**. (If it does not, click on the blank box there and select **Choose Sensor...** from the menu – see Figure 2 – and then proceed to select the Motion Detector.)

1.3.5 Click on the image of the motion detector below the words **DIG/SONIC1**.

1.3.6 In the menu that pops up, choose **Set Temperature...** See Figure 2.

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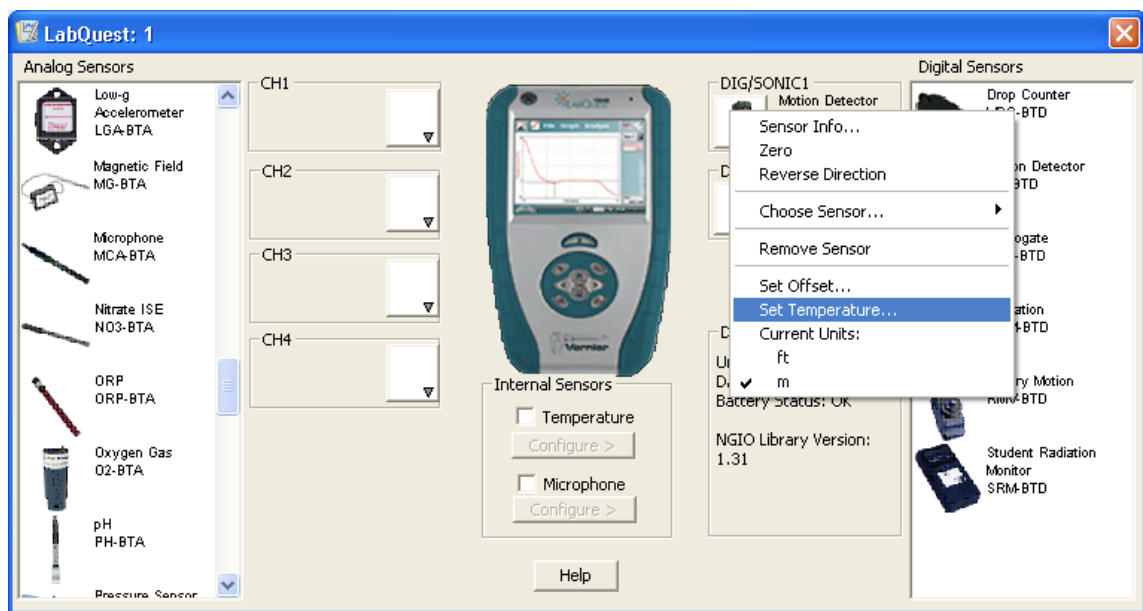


Figure 2

1.3.7 Enter the current room temperature provided to you by the lab instructor in the resulting dialog. See Figure 3.

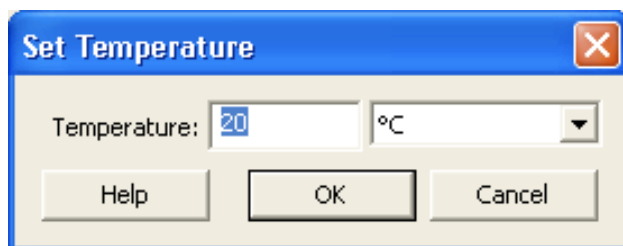


Figure 3

1.3.8 Click on **OK** and close out the **Set Up Sensors** dialog.

1.4 You are done with calibrating the motion detector. You may now return to your experiment.