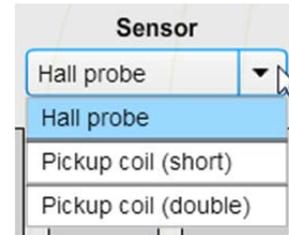


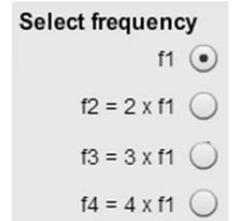
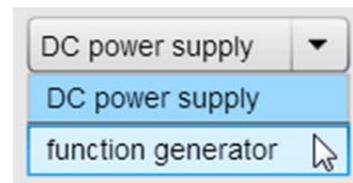
Sensors. A menu for options for the sensor is at the bottom of the screen in the left corner. Click here to choose between a Hall probe, a short pickup coil, and a larger pickup coil.

Any of the sensors can be moved on the screen by clicking and dragging on whichever one is active.



The voltage supplies. There are 2 different voltage supplies available to use. The menu to choose between the two is on the right of the screen. The default is the DC power supply and it starts off at 0V. To adjust the voltage, click and drag on the knob on the power supply. Twelve o’clock is 0V, towards 3 o’clock is positive voltage, and back towards 9 o’clock is negative. There’s also an on/off switch if you feel like conserving power.

The second power supply is an AC function generator. This generator gives the option of sinusoidal or triangular wave currents, which are chosen using the buttons on the front. The voltage is adjusted with the same knob as the DC supply. The frequency can be relatively adjusted using the buttons to the left of the generator. The default frequency can be multiplied by 1, 2, 3, or 4.

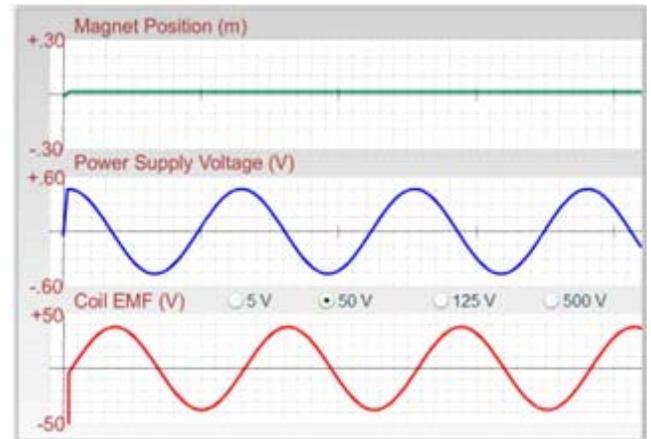


The B-Field lines. The magnetic field lines can be shown on the screen by setting them to ON using the menu at the bottom.

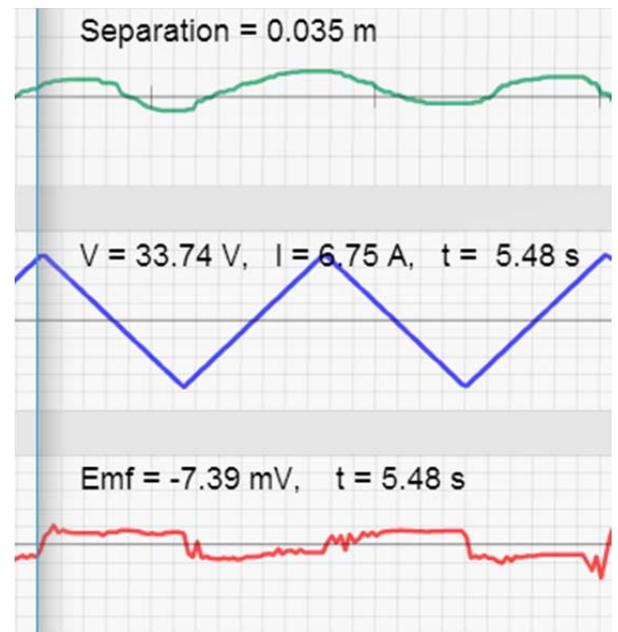


The computer interface. All of the numerical analysis from this experiment stems from the computer interface device. Click “Start Data” and these strip charts will take data from the coil and the motion sensor. With any B-field source, the top chart labeled “Magnet Position” and the bottom chart labeled “Coil EMF” are active.

When a solenoid and power supply are used the middle chart labeled “Power Supply Voltage” will become active. The magnet position is charted by the motion sensor, and is centered on the y-axis when the magnet is directly in the center of the coil. The scale of the coil emf chart can be adjusted using the buttons directly above it, and these are labeled “5V”, “50V”, “125V”, and “500V.” The data collection can be stopped by clicking the “Stop Data,” button, and can be cleared and restarted by clicking the “Start Data” button again.

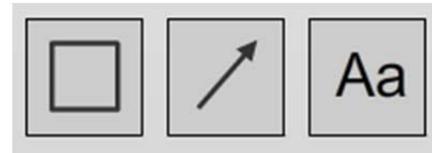


Graph Tool. This line on the graph can be clicked and drag left and right to see specific measurements. All of the data you can see in the image to the right can be found anywhere on the graph.



Sketch. There are tools that can be used to sketch, mark, and label items in your graphs. Boxes, arrows, and labels can be clicked and dragged onto the screen at any time. The arrows can be adjusted by clicking on the arrowheads or the body, and the boxes are adjusted by clicking on the circles in the middle and in the corners of each box. The labels work similarly, clicking and dragging on the circle will move the label, and clicking into the label will allow you to type.

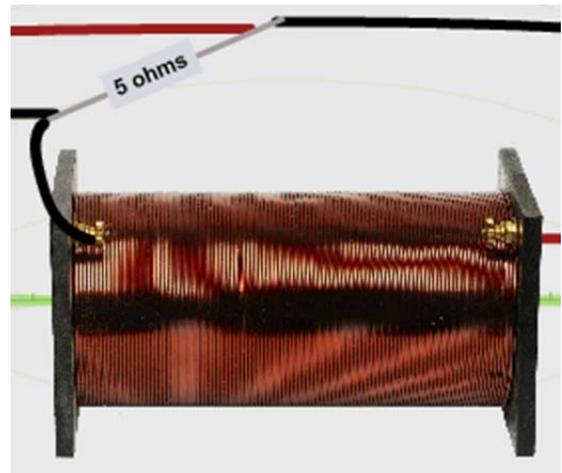
The entire screen can be cleared of sketch elements by clicking the Clear Sketch button. Hide Sketch will make any elements invisible until you click Show Sketch again.



Clear Sketch

Hide Sketch

The solenoid coil. This can be moved by clicking and dragging left and right.



Snapshot. As with most of our labs, you can take a screenshot of any portion of the screen by clicking on the Snapshot icon and then clicking and dragging a box around what you want to capture. A dialog will then appear asking you what you want to call the image and where you want to save it. In most labs, a timestamp will be added to the image to keep track of it better.

