## **Levitator Connections**



On the levitator circuitboard you will see 5 sets of wires as shown in the above image. We'll move clockwise around the image starting from the upper left to describe how these wires should be hooked up to your setup to complete the levitator task. For your convenience the only connections that you'll have to manipulate will have boldfaced section headings.

**Power:** In the upper left of the first image there's a set of three wires colored red, orange, and black. These are the power wires which will be connected to the voltage supply with the red wire connected to the 24V, orange wire to the 12V, and black (as usual) to ground). The proper connections are shown at right. Note that the ground wire is connected to the green "-12VDC" to generate the appropriate step values.



Next we see a pair of purple and green wires. These connect the circuit to the electromagnet and are regulated by the on/off switch in the metal body. As long as they appear to be properly connected nothing will need to be done with these wires, but if you later experience difficulties with the magnet being weak or the switch not appearing to work check these wires first.

**Circuit Output:** Next on the right side we see a pair of yellow and black wires (For some of you these might be black and some lighter color but they are connected in the same way). These are the outputs of the circuit, and so should be connected to the analog input of the DAQ (AI7) with the black wire connecting to the negative lead and the lighter wire connected to the positive lead. The proper connections are shown at right. The red-capped BNC connects to the AI7 input on the DAQ.



Next we see a set of 4 wires consisting of a pair of blue and white wires and a pair of gray and white wires. The blue and white wires connect the circuit to the detector, and the gray and white wires connect the circuit to the emitter. The long side of the detector goes into the blue wire, and the long side of the emitter goes into the white wire. As long as they appear to be properly connected nothing will need to be done with these wires.

**<u>Circuit Input</u>**: Lastly we see a pair of orange and black wires (For some of you these might be black and some lighter color but they are connected in the same way). These are the inputs of the circuit, and so should be connected to the analog output of the DAQ (AOO) with the black wire connecting to the negative lead and the lighter wire connected to the positive lead. The proper connections are shown at right. The green BNC connects to the AOO input on the DAQ.

