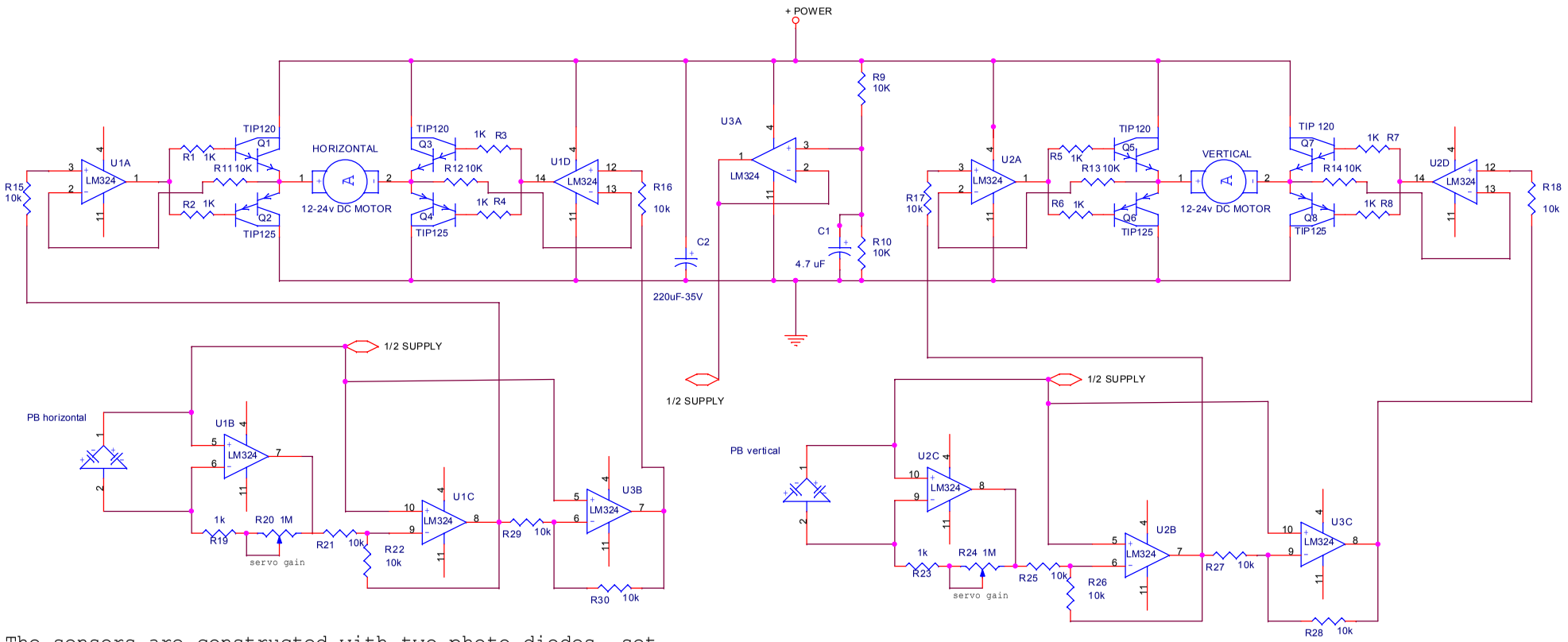

The sensors are constructed with two photo diodes set at 90 degrees to each other. The diodes polarity is reversed so that when both diodes have the same illumination, (each at 45 degrees to the sun) that the output current will cancel yielding zero volts.

When the angle is other than 45 degrees, the photo diode that is facing the sun more will generate more current while the other generates less, so the output voltage will change from zero to either positive or negative depending on which photo detector it is.

The bridge amplifier multiplies this voltage by up to 1000 times, and turns on the appropriate power transistors to make the motor run either CW or CCW to move the dish and the photo diodes back to the 45 degree angle where it points directly to the sun.

The other half of the circuit works exactly the same for the other axis.

Simple dual axis analog solar tracking servo system

Genesis One 6/11/2008