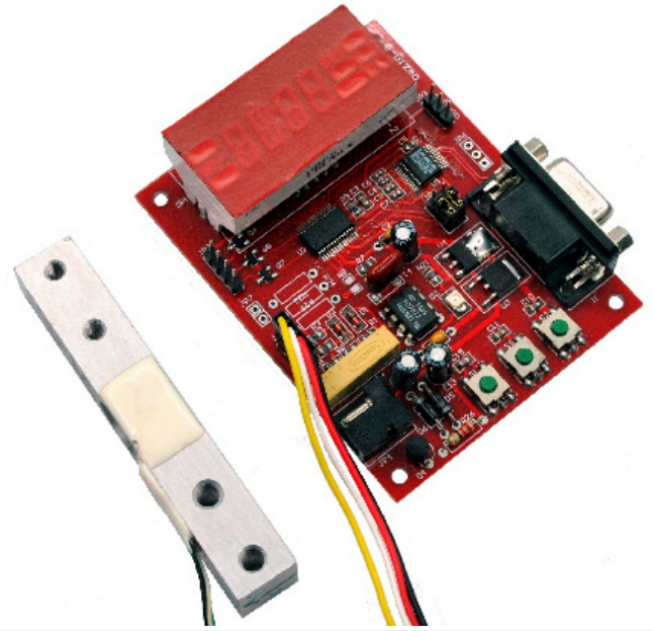
Load Cell (Weight) Sensor, Temperature Sensor & Controller

Technical Manual Rev 2r0



e-Gizmo Programmable load cell controller with digital comparator output. Accepts wide range of load cells.Easy calibration procedure. 11 bits conversion. Serial output facilitates communications with host controllers. RS-232 level serial output available as an option. Power input:12V

As of those many weighting gadgets, e-Gizmo load cell (weight) sensor and controller is one of the most easy scale calibrating menu configuration and it is programmable!, Its load cell connection pins enables you to change the load cell's amount. There is no need to worry about looking for different load cell amounts. They can be bought at all mechatronix shops like e-gizmo.

e-Gizmo Programmable temperature controller with digital comparator output. 0-100 C temperature range with the use of LM35D as temperature sensor.RS-232 level serial output available as an option.
Power input:12V

Like the load cell (weight) sensor and controller, a temperature sensor and controller is also one of the most accurate temperature sensors, its programmable controller enables you to change the conversion settings depending on the code that you upload. But it has the default program that senses ºC (Cen-tigrade).

Controller Illustration, Operation, & Menu Settings

(Load Cell Weight Sensor)

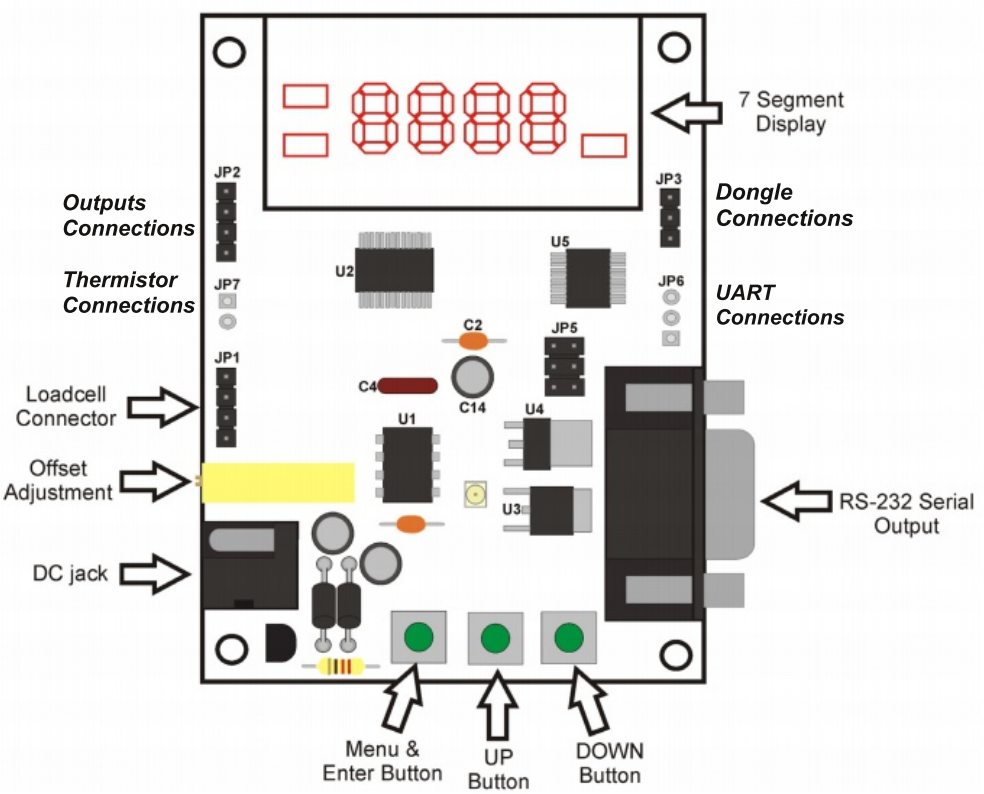


Figure 1. *Presentation of Load Cell (Weight) Sensor and Controller & its major Components.*

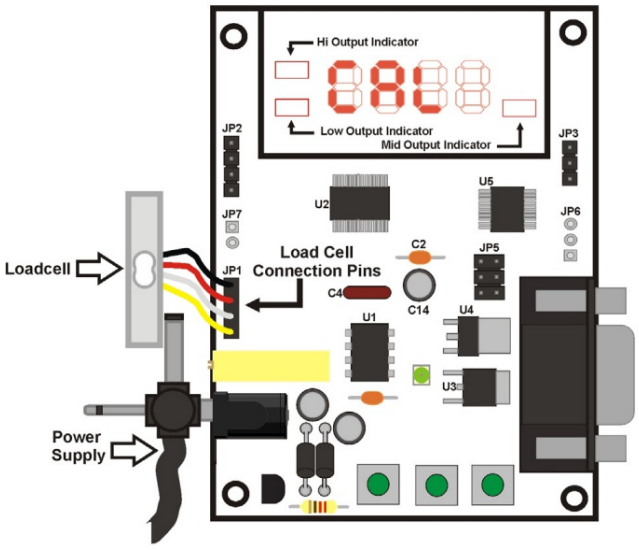


Figure 2. *Illustration of Load Cell (Weight) Sensor Controller with Load Cell Sensor and Power Supply Attached.*

To operate the Load cell sensor and controller, the first step is to put a power supply (12V) on the DC jack. And be sure that the Load cell sensor is correctly attached to the 'JP1' Pins.

To set the controller's menu, press the menu and enter button. As you can see, there are different Controller's menu naming (Hi, Low, End, & CAL). There are 3 kinds of Output in the Load Cell & Controller Kit. The "Hi", "Low", & "Mid". To set the "Hi" value, if you are in the Hi menu, simply press the 'Up Button' to set the value higher and to lower the value press the 'Down Button'. The Hi menu is where you can set the indication of the weight to be higher. If the actual value is greater than or equal to set Hi value, the actual value is Hi, and the "Low " Menu is where you can set the Low indication of the actual value. To set the low value just also presses the 'Up Button' to set the value higher and to lower the value click the 'Down Button'. If the actual value is less than or equal to the set low value, the value is low.

(Load Cell Weight Sensor)

While the Mid Value will only appear if the actual valu is the in-between Hi value & Low value. “CAL” c Calibration menu is where you can calibrate the CA value. The CAL value divided by to the internal valu (object’s weight) to get the Actual Value (Output).

Note: You need a reference value and set the CAL value to get the right output.

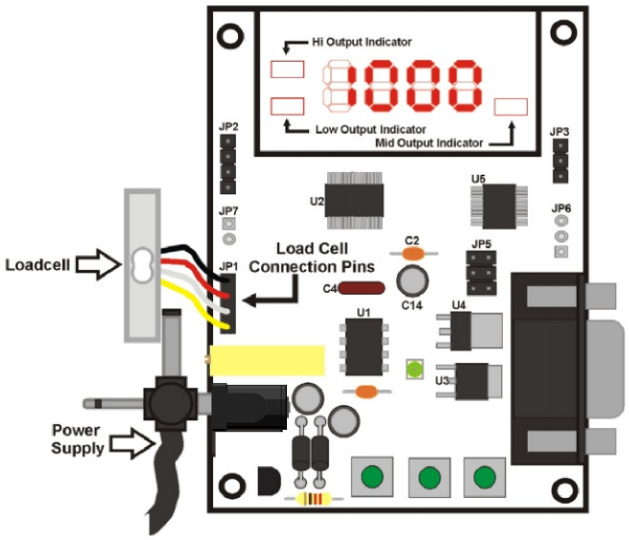


Figure 2.1 *Illustration of "CAL" value setting (Low menu maximun value is 3000).*

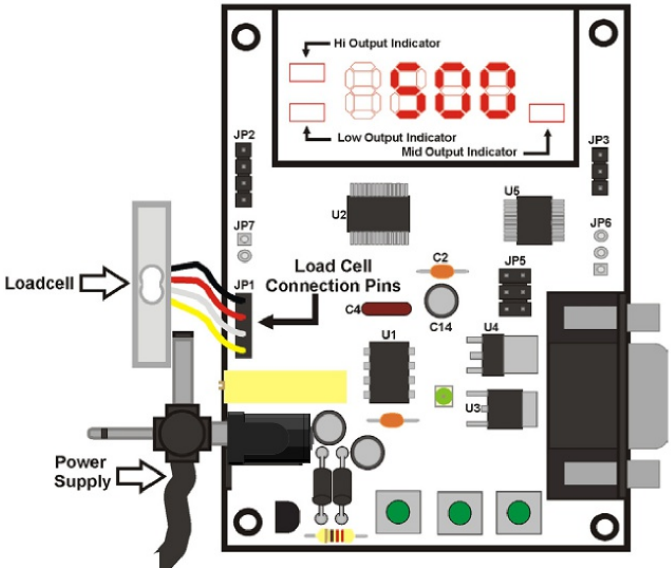


Figure 2.2 *Illustration on "Hi" value setting. (Hi menu maximum value is 3000).*

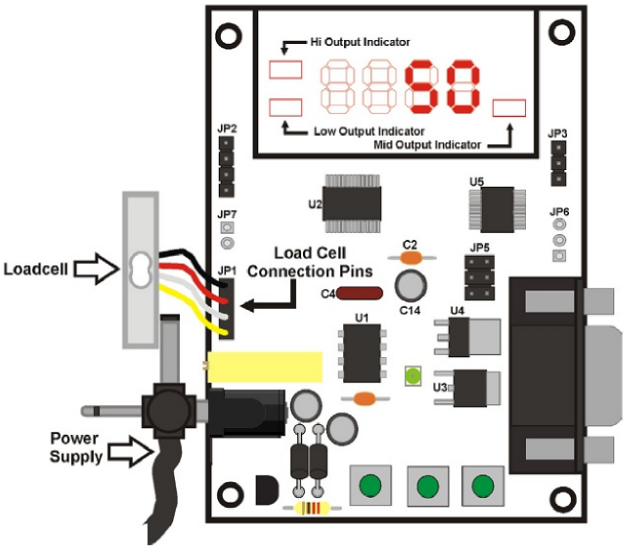


Figure 2.3 *Illustration of "Low" value setting (Low menu maximun value is 3000).*

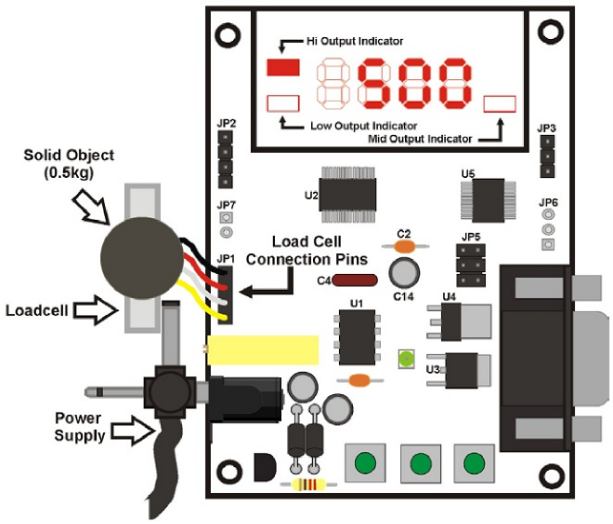
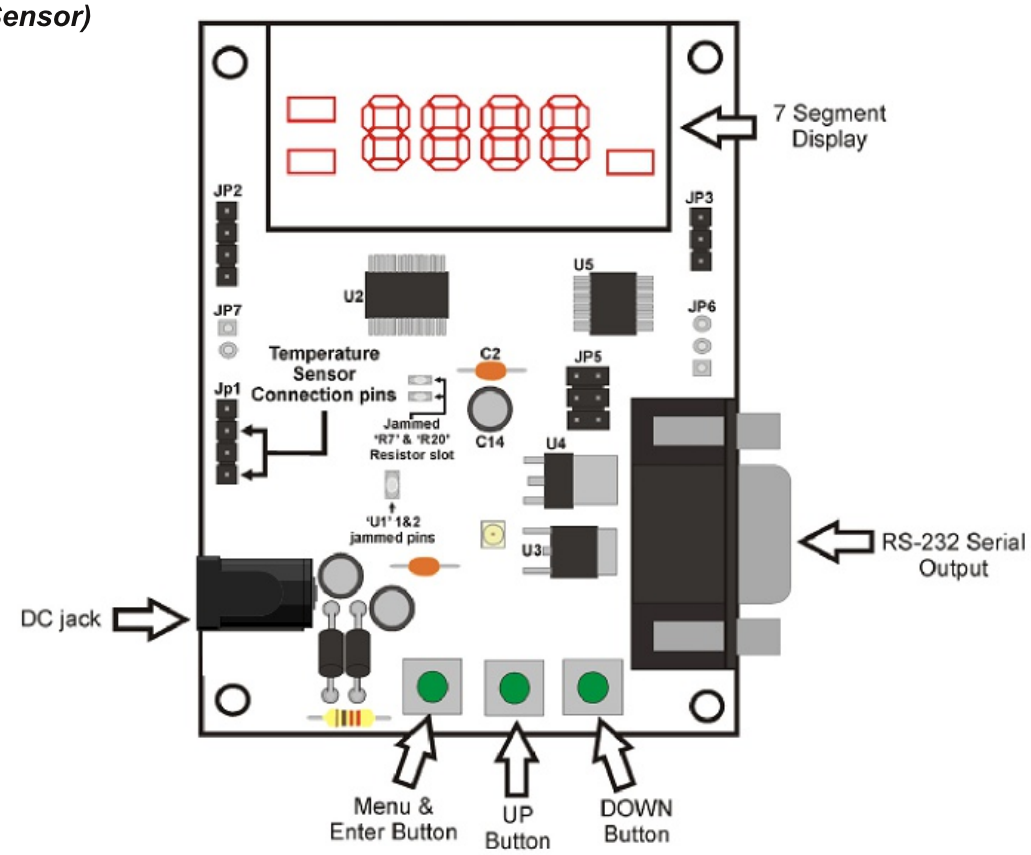


Figure 2.4 *Illustration on how to weight an object.*

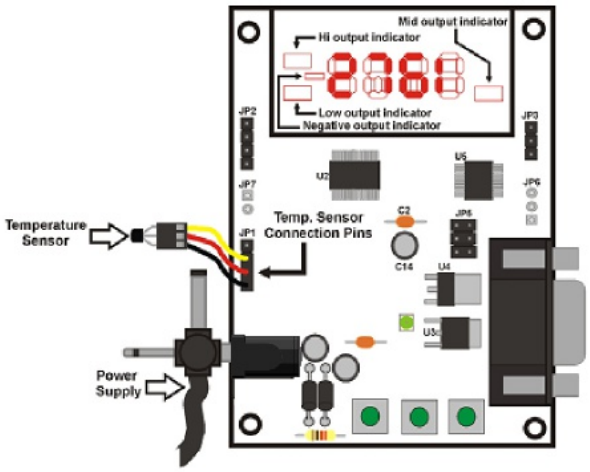
To measure the weight of an object, place the object on the top of the load cell sensor. The illustration above shows how the object’s output value is determined if Low, Hi, or Mid.

Note: if the starting value is not in ‘0000’ and the excess value has been just a point something, press the ‘Up Button’ or the Down Button so the value will return to ‘0000‘. And if the starting value is ‘1’ or higher and ‘-1‘ or lower., Now you will use the Offset Adjustment. Remove the power supply and rotate the gold colored switch CWº if the value is negative (-). And CCWº if the value is positive.

(Temperature Sensor)



Temperature sensor and Load cell (weight) sensor controller is almost 75% the same, the only difference is the load cell's controller has 'U1', 'C4', 'D4', " Offset adjustment", 'R2', 'R5', 'R6', 'R1', 'D1', 'R7', and 'R20'. And in the temperature sensor controller's 'R7', 'R20', and 'U1's 1 and 2 pin slot were jammed. Both sensor controllers had the same PCB layout and other on-board components. Temperature sensor and controller can be placed at all places or area to catch the specific area temperature. It was calibrated to measure ºCelcius (Centigrade), and the sensor's sensing range is 0ºC up to 150ºC only.



As like the load cell sensor and controller, temperature sensor and controller has the same menu, navigation buttons and configuration, but in temperature sensor's controller the 'CAL' menu is calibrated by e-Gizmo and you don't need to calibrate it. Changing the 'CAL' value might affect the sensor's accuracy in scaling the actual output.

To operate the controller you also need a power supply (12V) and connect it to DC jack, Temperature Sensor must be connected as like as in the illustration (Figure 2.). If you don't connect the temperature sensor right, Controller's output display will become too high.

(Temperature Sensor)

E.g. The actual temperature reading is 27.85ºC (Sensor connects right), and if the sensor is not connected right, the actual reading went up to 44.57ºC.

The first two numbers in the seven segment display are the whole number, and the last two numbers is the decimal point. (See the illustration below)

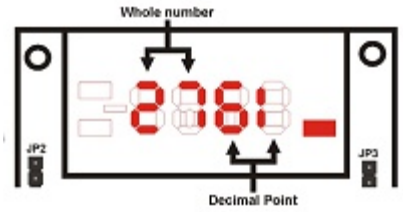


Figure 2.1 *Illustration Sensor's reading output.*

The 'Low' &'Hi' menu and value can be set like the Load cell controller the only difference is that the Low & Hi max value is '9999'. The output indicator function is also the same as the load cell controller, it depends on how you set the Low & Hi value, and the Mid indicator will appear if the value is in-between the Hi & Low actual values.

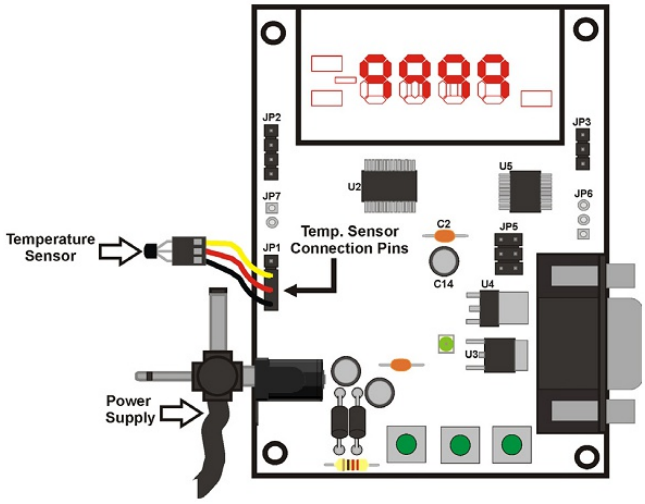


Figure 2.2 *Illustration of 'Hi' & 'Low' max value.*

Temperature sensor & controller cannot scale negative values or colder than 0ºC.

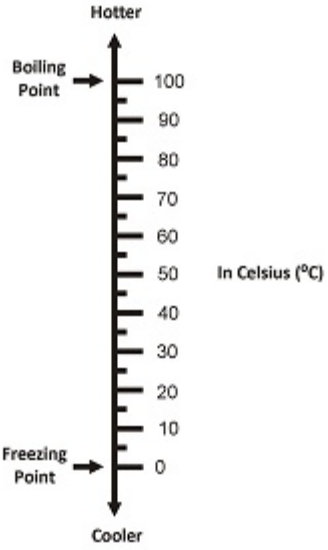


Figure 2.3 *Temperature illustration for water.*

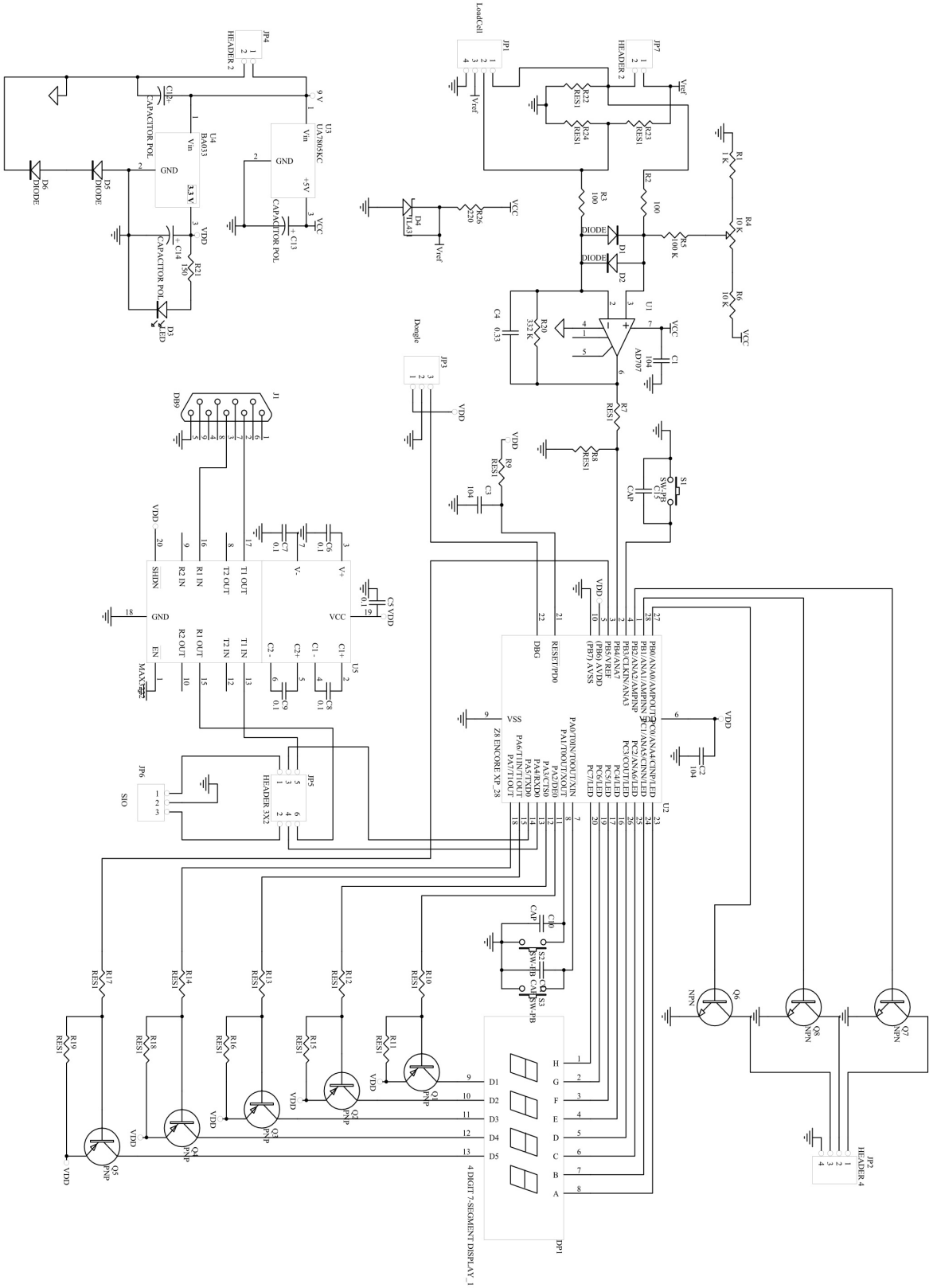


Figure 3. Schematic Diagram of e-Gizmo Load Cell Controller sensor

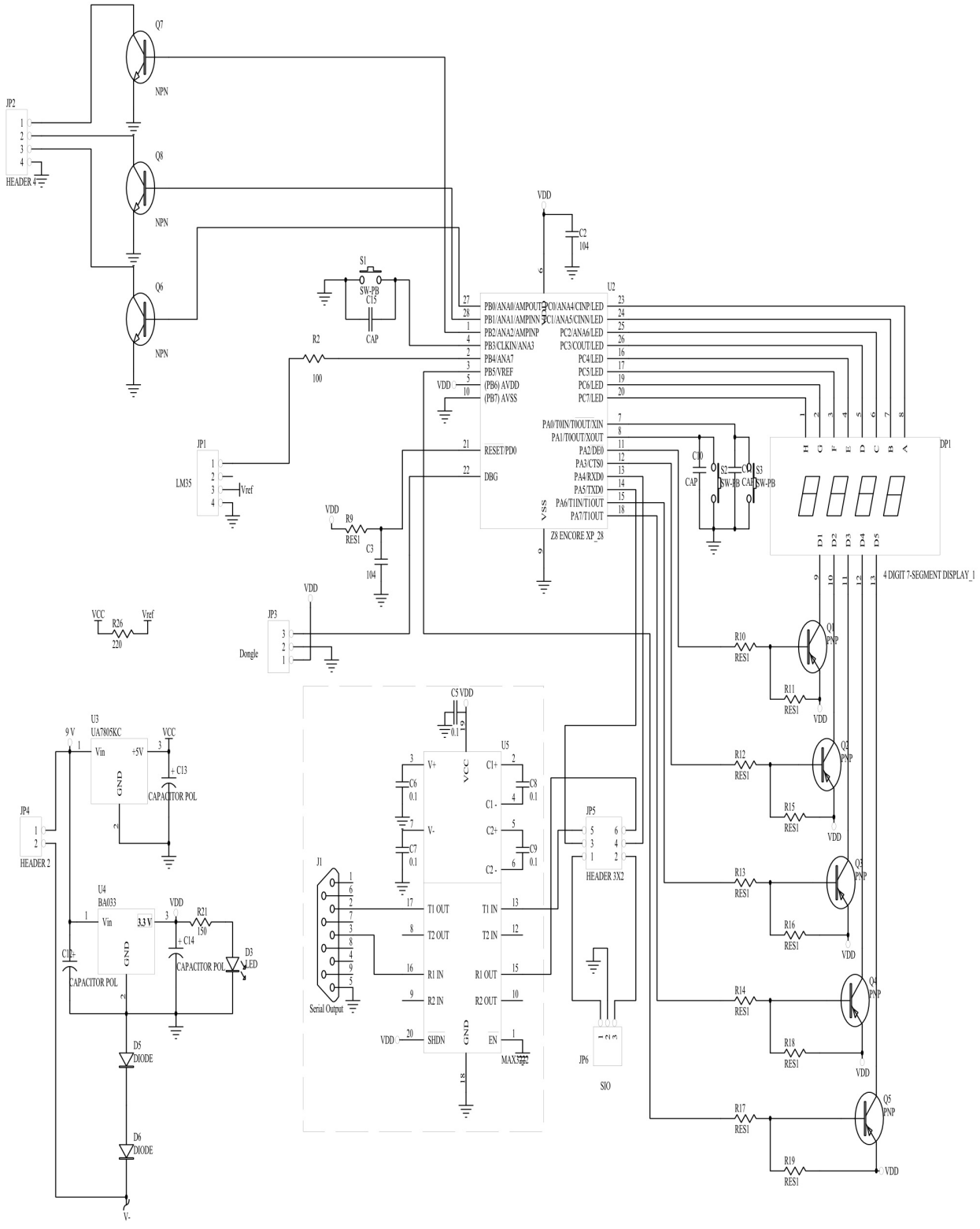


Figure 4. Schematic Diagram of e-Gizmo Temperature Controller sensor

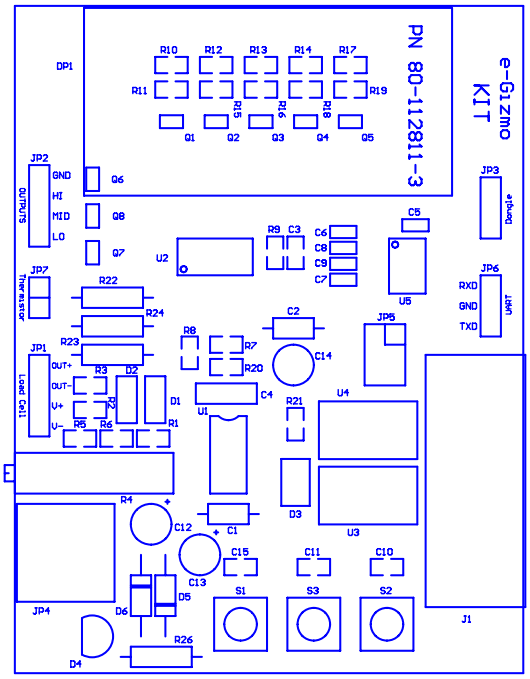


Figure 5 *Parts Placements*

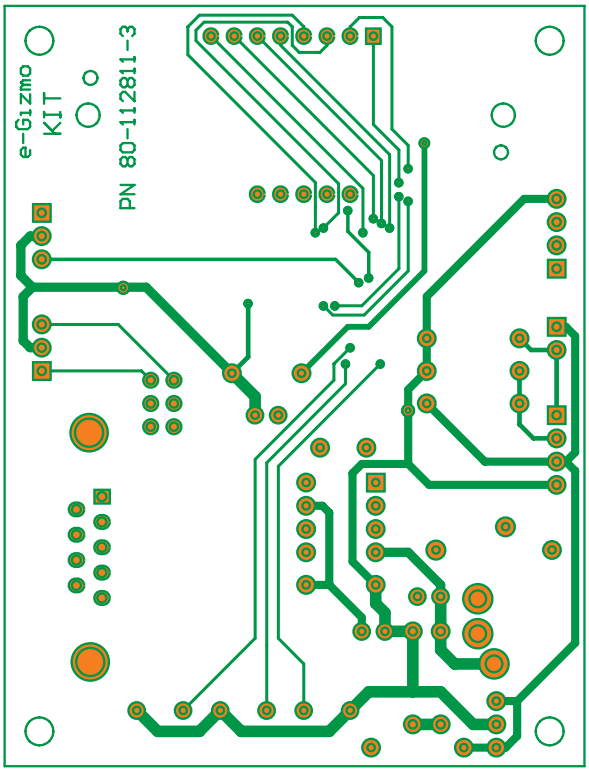


Figure 6 *Bottom Guide layer*

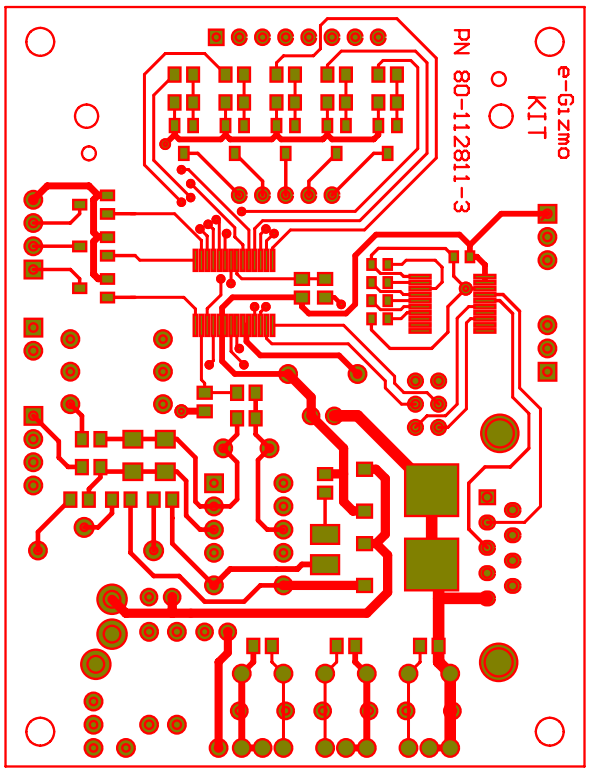


Figure 7 *Top Guide Layer*