ALLEN BRADLEY SLC-500
TON LAB 2- hold in EXERCISE

Objective: Upon completion of this lab exercise, the student should be able to:

1. Explain the operation of a TON instruction in a hold-in type of program.
2. Explain the operation of the status bits controlled by a TON instruction.
3. Change the time delay value in the TON instruction.
4. Explain the data range of an SLC-500 timer.

1. Key in the following program and save to a local drive**.**

2. Download the program to the **SLC-500**.

3. Go Online to the **SLC-500** and put the processor into the **RUN** mode. You should see the following program.

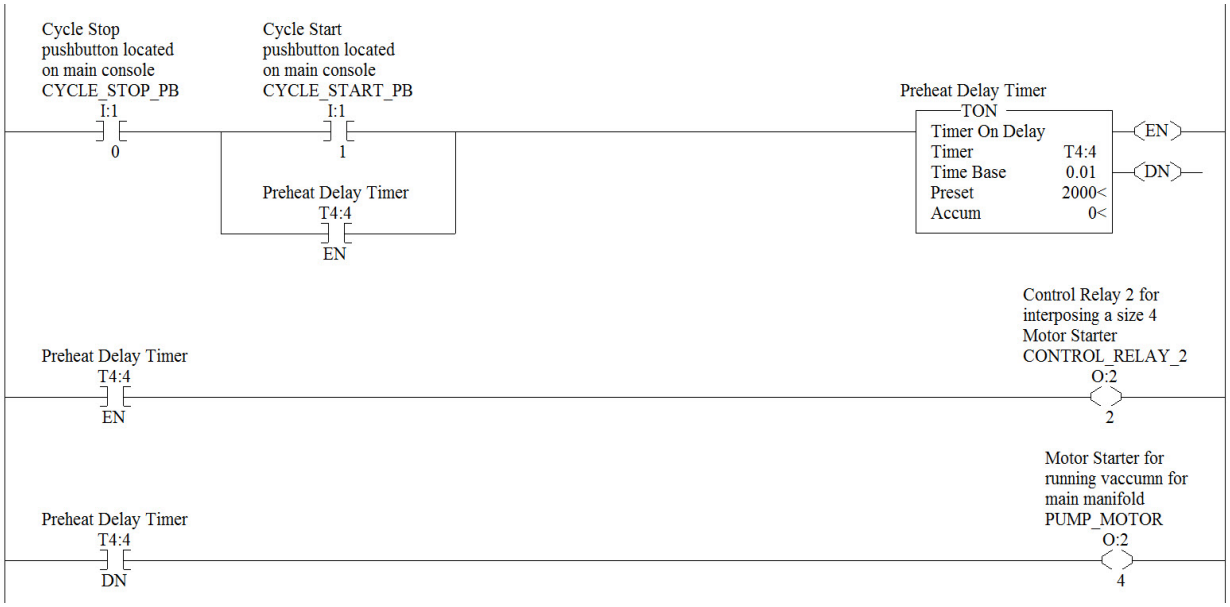

Figure 1. Basic TON hold-in logic program.

4. If programmed properly, the **CYCLE_STOP_PB** should now have highlight. Push the **CYCLE_START_PB**. Does the timer start to time? _____

5. How long after you start the timer until output **0:2/2** comes on?

6. How long after you start the timer until output **0:2/4** comes on?

7. How can you reset the accumulated value of the timer to zero?

8. Does the timer accumulated value have a BCD or an Integer weight?

9. Try entering a value of 40000 into the timer preset value. Will it accept this value?

10. What is the largest preset value that the timer will hold? _____

11. Put the cursor over the timer. Right mouse click to go to Data Table. Move the cursor to the preset value and change it to a value of 2500.

12. What location in the SLC-500 memory is the **accumulated value** of the timer stored in?

13. Draw the rung of logic that would turn on output **0:2/3** when the timer is timing.

14. Go Offline, modify the program, resave it to the hard drive, then download the program into the processor memory.

Questions:

1. When will the accumulated value of a **TON** instruction be reset to zero?

2. When does the timer "**DN**" bit come on for a **TON** instruction?

3. What word locations is the Timer Preset value stored in for timer **T4:2**?

4. What will the dwell time be for a **TON** timer if the preset is **3000** and a time base of **0.01**?

5. How will the **TON** accumulated value be affected by turning the timer off, then turning it on again?

6. How would you change the preset of the timer to **4000**?

7. What would be the dwell time of the timer if the value of **4000** were put into the timer preset?