

PLC127 LAB 1.1: ALLEN BRADLEY SLC-500 TIMER CASCADING

Student Name: _____

Student ID: _____

LAB OUTCOMES:

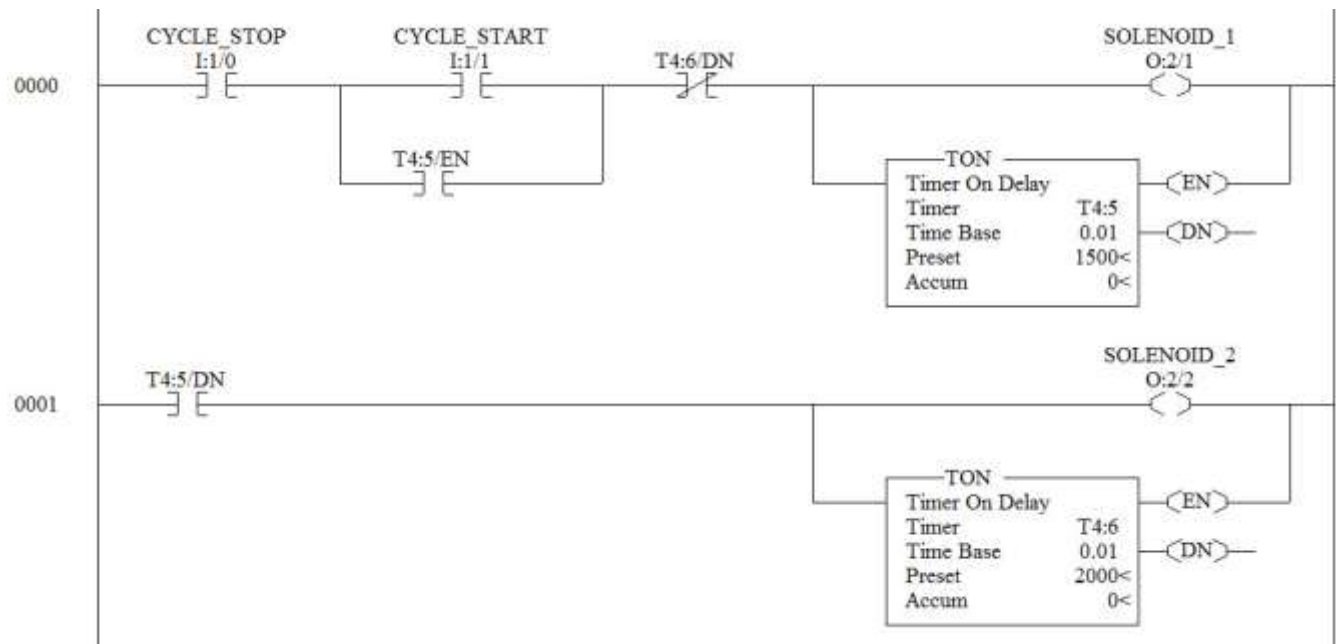
1. Explain the operation of the timer status bits and how they are used in the program
2. Demonstrate how to toggle the address symbols and descriptions on and off
3. Demonstrate how to change the timer preset values from the data file
4. Explain the operation of a program with multiple timers and how they control the outputs

LAB PROCESS:

Write the program as shown in part 1 and then save it to the hard drive of the computer. You will then download the program to the SLC-500 processor. Once that it is complete you will go online with the SLC-500 and place the processor in RUN mode.

Part 1

1. Key in the following program and save it to the hard drive. Name the project something you will be able to easily remember.



2. Pull the **Cycle_Stop** pushbutton to reset it. Press the **Cycle_Start** pushbutton.

How long until **Solenoid_1** comes on?

How long until **Solenoid_1** shuts off?

3. Pull the **Cycle_Stop** pushbutton to reset it. Press the **Cycle_Start** pushbutton.

How long until **Solenoid_2** comes on?

How long until **Solenoid_2** shuts off?

4. What two possible conditions will cause the hold in contact to drop out on the first rung?

- Change the delay time of the first timer to 13.6 seconds from the data table view

Change the delay time of the second timer to 18.5 seconds from the data table view

The following graphics show how to get to the data table view and change the timer preset

The first screenshot shows a ladder logic diagram with a TON timer. A right-click context menu is open over the timer address T4:5. A red box highlights the 'Goto DataTable' option. The second screenshot shows the 'Data File T4 -- TIMER' window. A red box highlights the 'PRE' (Preset) column, and another red box highlights the value '1500' in the 'PRE' column for T4:5. A third red box highlights the 'Enter' key on the keyboard, indicating that it should be pressed to save the change. A fourth red box highlights the 'Close' button on the window, indicating that it should be closed to return to the ladder display.

Offset	EN	IT	DN	BASE	PRE	ACC	(Symbol)	Description
T4:0	0	0	0	.01 sec	0	0		
T4:1	0	0	0	.01 sec	0	0		
T4:2	0	0	0	.01 sec	0	0		
T4:3	0	0	0	.01 sec	1500	0		
T4:4	0	0	0	.01 sec	1200	0		
T4:5	0	0	0	.01 sec	1500	0		
T4:6	0	0	0	.01 sec	2000	0		
T4:7	0	0	0	.01 sec	0	0		
T4:8	0	0	0	.01 sec	0	0		
T4:9	0	0	0	.01 sec	0	0		
T4:10	0	0	0	.01 sec	0	0		

- Toggle the address symbols off in the ladder display

The following graphic shows how to turn the symbols and address descriptions on and off

The first screenshot shows a ladder logic diagram with a timer T4:5. A right-click context menu is open over the timer address T4:5. A red box highlights the 'Properties...' option. The second screenshot shows the 'View Properties' dialog box. A red box highlights the 'Show Descriptions' checkbox, which is currently checked. Another red box highlights the 'Show Symbols' checkbox, which is currently checked. A third red box highlights the 'OK' button, indicating that it should be clicked to apply the changes and return to the ladder display.

Questions

1. What value would need to be in the preset of timer T4:5 to make it a 13.6 second timer?
2. What value would need to be in the preset of timer T4:6 to make it an 18.5 second timer?
3. If the **CYLCE_STOP** button is pressed, do the timers stop timing and retain their accumulated values until the timers are started again?
4. List the steps to turn the address symbols and descriptions on and off on the ladder display.
5. Which timer controls the amount of time **SOLENOID_2** is “on”?
6. What steps would a user go through to change the timer preset value from the data table view?

The outcomes of this exercise (listed on page 1) specifies the skills that the Student must demonstrate to the Instructor. Once the Instructor is satisfied with the demonstration of Knowledge & Skills by the individual student, they will sign this document (for the student), then enter a 100% into the Hands-On Lab grade in Sakai.

I verify that this student has completed all of the requirements of this Hands-On Assessment:

Student Name: _____

Faculty Signature: _____ Date: _____

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